DOCUMENT RESUME

ED 140 260 CS 003 491

AUTHOR Kling, Martin, Ed.
TITLE Language Development for the Classroom and Remedial Reading. Proceedings of the Fall 1972 Rutgers University Reading Conference.
INSTITUTION Rutgers, The State Univ., New Brunswick, N.J. Reading Center.; Rutgers, The State Univ., New Brunswick, N.J. Univ. Extension Div.
PUB DATE 73
NOTE 101p.; Paper by K. Goodman, p. 50-56, removed due to copyright restrictions

EDRS PRICE MF-$0.83 HC-$6.01 Plus Postage.
DESCRIPTORS Composition Skills (Literary); Elementary Secondary Education; *Language Development; Language Experience Approach; *Linguistics; *Psycholinguistics; Reading Consultants; Reading Diagnosis; *Reading Instruction; *Reading Research; Reading Tests; *Remedial Reading; Standardized Tests

ABSTRACT

Papers collected in this booklet discuss various aspects of language development in the classroom and in the area of remedial reading. Titles include "Project II: Strategies and Milestones" by Martin Kling, which describes the outcomes of an investigation of research in language development and reading; "Language, Linguistics, and Learning to Read" by Harry Singer; "What Interests Psycholinguistic Researchers" by Patrick J. Finn; "Language Learning and the Teaching Process" and "On Teaching Composition: Some Hypotheses as Definitions" by Janet Ann Emig; "Children's Language and Experience: A Place to Begin" and "Reading: A Psycholinguistic Guessing Game" by Kenneth S. Goodman; "Language Assessment Techniques" by Margaret O. Knapp; "Diagnostic Teaching: A Method for Assessing Reading Skills" by James E. Swalm; "Standardized Reading Tests--How Useable Are They?" by Joseph Zelnick; and "Roles, Responsibilities, and Qualifications of Reading Specialists" by the Professional Standards and Ethics Committee of the International Reading Association. (RS)

****
* Documents acquired by ERIC include many informal unpublished *
* materials not available from other sources. ERIC makes every effort *
* to obtain the best copy available. Nevertheless, items of marginal *
* reproducibility are often encountered and this affects the quality *
* of the microfiche and hardcopy reproductions ERIC makes available *
* via the ERIC Document Reproduction Service (EDRS). EDRS is not *
* responsible for the quality of the original document. Reproductions *
* supplied by EDRS are the best that can be made from the original. *
****

RUTGERS UNIVERSITY
THE STATE UNIVERSITY OF NEW JERSEY
UNIVERSITY EXTENSION DIVISION
CONFEPENCES DEPARTMENT

U.S. DEPARTMENT OF HEALTH
EDUCATION & WELFARE
NATIONAL INSTITUTE OF
EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL NATIONAL INSTITUTE OF EDUCATION POSITION OR POLICY.

ED140260

50th
1923—ANNIVERSARY—1973

Language Development for the Classroom & Remedial Reading

Program Chairman: Martin Kling
Coordinator of Reading Instruction Curriculum, Department of Psychological Foundations
Rutgers Reading Center, Graduate School of Education

CS003491

2

PROGRAM SCHEDULE

8:30 a.m.	REGISTRATION AND COFFEE
9:00 a.m.	OPENING REMARKS Joseph W. Czapp, Director of Conferences Rutgers University
	I. Lessons Based on Psycholinguistic Principles Patrick J. Finn
	II. Remedial Reading Joseph Zelnick
10:30 a.m.	BREAK
	III. Writing and Language Development Janet Emig
	IV. Preview of Afternoon Workshops
12:00 noon	LUNCHEON
1:30 p.m.	(7) Workshops
2:15 p.m.	Repeat of (7) Workshops
3:00 p.m.	Adjourn

PROGRAM

I. **LESSONS BASED ON PSYCHOLINGUISTIC PRINCIPLES**
Patrick J. Finn
Graduate School of Education, Rutgers University

II. **REMEDIAL READING**
Joseph Zelnick
Livingston College, Rutgers University

III. **WRITING AND LANGUAGE DEVELOPMENT**
Janet Emig
Graduate School of Education, Rutgers University

IV. **SEVEN WORKSHOPS:**

1. **Psycholinguistics**
Patrick J. Finn
2. **Remedial Reading**
Joseph Zelnick
3. **Writing and Language Development**
Janet Emig
4. **Assessment of Skill Development in Reading Programs**
James Swalm — New Jersey Department of Education
5. **Developing Language Skills with Young Children**
Margaret O. Knapp — Newark State College
6. **Miscues: A New Look at Oral Reading Errors**
Margaret Smith-Burke — Graduate School of Education, Rutgers University
7. **Dialect and Reading: Pros and Cons**
Martin Kling

FOREWORD

This year's Rutgers' Fall Reading Institutes are consistent with the earlier ones dating back to 1965. The main purpose of these Institutes has been to present and interpret the latest developments in reading. In addition, the aim has been to stimulate further study and interest in the areas highlighted.

This year's program, "Language Development for the Classroom and Remedial Reading," characterizes an interdisciplinary thrust in the field, leaning heavily on language development and psycholinguistics. The papers in this booklet go from the general to the specific.

Kling's reprint summarizes the milestones reached by a quarter of a million dollar project which defines and assesses what we know and don't know about research in Language Development, Learning to Read, and the Reading Process. The final report presents 21 evaluative survey papers.

Singer's paper gives a comprehensive overview of research and the implications of linguistic inquiry to reading theory and practice.

Finn's annotated bibliography presents an outline of crucial issues and methods developed by psycholinguistic researchers.

Emig's two articles orient us more specifically to language learning and the teaching of composition.

Goodman's two selections highlight practical suggestions about teaching stories about experience as well as a model of reading.

The last three papers by Knapp, Swalm, and Zelnick get into the diagnostic aspects of language assessment, reading skills, and remediation.

All the papers point to strong interdisciplinary activity and efforts at understanding language development, psycholinguistics, and reading for the researcher and teacher. However, as has been pointed out by those concerned with translating basic research into practice, there are many, many steps to be made in going from one level to the next involving the development of knowledge for researchers and practioners.

Martin Kling, Ph. D.
Coordinator, Reading Curriculum
Psychological Foundations Department

TABLE OF CONTENTS

PROJECT II: STRATEGIES AND MILESTONES
Martin Kling 1

LANGUAGE, LINGUISTICS AND LEARNING TO READ
Harry Singer 2

WHAT INTERESTS PSYCHOLINGUISTIC RESEARCHERS
Patrick J. Finn. 24

LANGUAGE LEARNING AND THE TEACHING PROCESS
Janet Ann Emig 35

ON TEACHING COMPOSITION: SOME HYPOTHESES AS DEFINITIONS
Janet Ann Emig 42

CHILDREN'S LANGUAGE AND EXPERIENCE: A PLACE TO BEGIN
Kenneth S. Goodman 50

READING: A PSYCHOLINGUISTIC GUESSING GAME
Kenneth S. Goodman 57

LANGUAGE ASSESSMENT TECHNIQUES
Margaret O. Knapp 71

DIAGNOSTIC TEACHING: A METHOD FOR ASSESSING READING SKILLS
James E. Swalm 82

STANDARDIZED READING TESTS -- HOW USEABLE ARE THEY?
Joseph Zelnick 89

ROLES, RESPONSIBILITIES, AND QUALIFICATIONS OF READING SPECIALISTS
International Reading Association. 94

Martin Kling, Editor: LANGUAGE DEVELOPMENT FOR THE CLASSROOM AND REMEDIAL READING, 1973.

EDITORIAL ASSISTANCE WAS PROVIDED BY BARBARA LUST

Rutgers University
New Brunswick, New Jersey 08903

"PERMISSION TO REPRODUCE THIS COPYRIGHTED MATERIAL HAS BEEN GRANTED BY
International Reading Association
TO ERIC AND ORGANIZATIONS OPERATING UNDER AGREEMENTS WITH THE NATIONAL INSTITUTE OF EDUCATION. FURTHER REPRODUCTION OUTSIDE THE ERIC SYSTEM REQUIRES PERMISSION OF THE COPYRIGHT OWNER."

Reprinted from:
the reading teacher
Volume 25 No. 2
November 1971

PROJECT II: Strategies and milestones

MARTIN KLING

Principal investigator in the literature search phase of the Targeted Research and Development Program in Reading, Kling is associate professor of education and associate director of the Reading Center, Graduate School of Education, Rutgers University.

WITHOUT an adequate and integrated understanding of the behavioral operations upon which language and reading are based, appropriate procedures for teaching beginning reading to all children, and for development and refinement of these complex skills cannot be constructed confidently and effectively. Yet a great body of uncoordinated evidence of varying quality has been accumulated concerning language and reading, and in recent years a number of basic disciplines increasingly have concerned themselves with questions related to these areas. To be useful to the educator, this diverse body of literature must be identified, evaluated and integrated[1].

The specific objectives of Project II, as part of this quest for synthesis, were to:

- identify and evaluate *all* significant contributions to the literature in:
  - language development
  - learning to read
  - the reading process.
- identify explanations in the literature of how these processes operate and how the behavioral events of operations within them interact.
- describe and synthesize models and partial models, to present as many different logically coherent models in each area as seemed necessary.
- describe hypotheses and associated tests needed to refine and extend models presented, to test assumptions and to synthesize with them the unincorporated facts and insights of fields studied.

The basic stance of these four objectives might be called sophisticated naivete; leave no stone unturned in an effort to zero in on and refine the subsequent four phases called for in the Targeted Research and Development Program.

As soon as Project II was funded, reviewer evaluators, advisory panel members and a central processing group at Rutgers were mobilized into the three areas: language development, learning to read, and reading process. Within each given area scholars were given responsibility to cover a more specific section, organized as a domain. Results of combined creative efforts of the resulting team of twenty-four scholars from thirteen universities and one laboratory are here reported as milestones reached between July 1, 1970 and June 30, 1971, the duration of the contract.

Milestone 1. *Working bibliography.* A working bibliography totaling 8,544 references was developed for all three areas by the reviewer evaluators and advisory panel team. The language development area accounted for 1,868 references, the learning to read area included 2,225 references, and the reading process area amounted to 4,451 references. Master tapes were developed for each area so that references could be retrieved according to subject, author, domain and KWOK (Key Word Out of Context). KWOK consisted of an alphabetical arrangement of key words from the titles, used as descriptors under which related references were listed.

Milestone 2. *Development and use of a reference evaluation form (REF) to evaluate the literature.* Under the leadership of Dr. Jasan Millman, professor of Educational Research Methodology, Cornell University, the TRDPR team developed the REF, the main purpose of which is to assess references which warrant further critical review. Some 890 such references were analyzed and abstracted. These were grouped into five reference categories: model, research, nonresearch, model and research, and model and nonresearch.

Milestone 3. *Retrieval of reference evaluation forms using various criteria.* A program was developed to retrieve Reference Evaluation Forms for each of the five categories. In addition, REF's could be retrieved on the basis of assumptions, types of models, constituent elements, research design, stated but untested hypotheses, strong conclusions and untested hypotheses.

Milestone 4. *Interpretive summary papers identifying models and state of knowledge.* Twenty-one interpretive summary papers constitute the final report. Sixteen papers dwell on particular domains such as computer simulation models, writing systems, cognitive and psycholinguistic models of learning to read, models of instruction, sociolinguistics, etc. Three papers, one for each area, attempt to integrate each given area (language development, learning to read, and the reading process). Another paper attempts to synthesize all three areas. An introductory section gives the background and development of the literature search in the context of the Targeted Research and Development Program in Reading.

The final report, *The Literature of Research in Reading with Emphasis on Models*, is available for $10 from IRIS Corporation, P.O. Box 372, East Brunswick, N.J. 08816. N.J. residents add 5% sales tax.

[1] Kling, M., Geyer, J. J., and Davis, F. B. Proposal for TRDPR Project Number Two, Literature Search. New Brunswick, N.J.: Graduate School of Education, Rutgers University, 1970.

Language, Linguistics, and Learning to Read*

Harry Singer
University of
California

Prior to the revolution in linguistics theory wrought by structural and transformational-generative grammars (Bloomfield, 1933; Chomsky, 1957) language, linguistic theory, and their modes of inquiry played little, if any role in reading theory, research, or instruction. With the exception of immaturity in vocabulary, memory, and other intellectual functions that participate in speech, oral language development was thought to have become asymptotic to a mature level of linguistic ability about age five (McCarthy, 1954). Since formal reading instruction was not initiated until age six, oral language ability was therefore considered irrelevant for explaining individual differences in acquisition of reading behavior, particularly as word meaning and sentence length, essential indices of reading difficulty, were controlled in basal readers, well within the linguistic ability of probably all beginning readers. Consequently, it was believed that the only new component in learning to read was acquisition of ability to perceive and process printed stimuli. However, recent research indicates that oral language development, including grammatical interpretation, continues at least throughout the elementary grades (Menyuk, 1963; C. Chomsky, 1970; Loban, 1963; Strickland, 1962; Ruddell, 1966, 1970).

The civil rights revolution also led to a more active role for linguistics in the field of reading by focusing attention on the relatively low achievement of Black and Chicano and other minority groups. Bilingual and dialectal differences between these groups and the majority group began to be suspected as a prime cause of low reading achievement in minority groups. (Baratz, 1969; Baratz and Shuy, 1969; Goodman, 1965, Stewart, 1969; Wolfram, 1970; Singer, 1956; Entwisle, 1971; Lucas and Singer, 1972) and linguistic analyses were then made of these dialects (Labov, 1965, 1969, 1970). Linguistic theory and inquiry were also brought to bear on other aspects of reading, such as the relationship between the writing system and reading acquisition (Gelb, 1963; Venezky, 1967, 1970; N. Chomsky, 1970; Gillooly, 1971) and the interrelationships among oral language, reading, and writing (Reed, 1965, 1970; C. S. Chomsky, 1970).

Productive application of linguistics to the field of reading made it necessary to formulate, revise, and expand theories and models of reading to incorporate into them the interrelationships among the stimulus characteristics of writing systems and the response components of phonological, morphological, syntactical, lexical, and affective systems. These systems are mobilized and organized according to the purposes of the reader in order to process and transform the surface characteristics of oral or printed stimuli into a structural form and level that could result in a semantic interpretation (Singer, 1969; Ruddell, 1970; Goodman, 1965, 1972).

*Invitational Paper read at a Preconference Session on "Translating Basic Research into Classroom Practice," Annual Convention of the International Reading Association, Detroit, Michigan, May 1972.

Permission granted by author to print paper for this booklet only.

The affective domain may be the next frontier of research in reading. Exploration in experiential responses to and affective components associated with reading have already attracted theoretical and research interests (Russell, 1970; Rosenblatt, 1968; Athey, 1965, 1970; Athey and Holmes, 1969).

The resulting insights gained from this research and its resulting revision in theories and models of reading have increased our understanding of man's ability to transcend time and space through the medium of the printed word. This understanding is also enhancing methods and materials of instruction for making a difference in reading acquisition and performance (Ruddell and Williams, 1972; Corder, 1971).

The research evidence that has led to these changes in theories and models of reading are voluminous (Singer and Ruddell, 1970; Davis, 1971; Corder, 1971). Only some of it can be reviewed here. I shall briefly review some selected research on language development, writing systems, dialect and the reading process, and then draw some implications for classroom practice.

Review of Research

Language Development

Language development appears to be a function of cognitive processing operations in productive interaction with a linguistic environment, and this developmental interaction continues as the brain matures (Athey, 1971; Lenneberg, 1967; Slobin, 1966b). During the first year of life, the child babbles a universal range of sounds that gradually converge towards the set of distinctive features presented by his linguistic models. At the age of 12 months, the average child can say two words (Bayley, 1949), which may be holophrases, single words that express sentences of meaning.

The gradient of vocabulary remains low from age one to two, as the child, still in a sensori-motor stage of cognitive development, learns perceptual invariants of time, space, and motion. By 18 months, the child has acquired a 200 to 300 word vocabulary and acts as though he has a grammatical rule for generating two-word sentences (Braine, 1963; McNeil, 1966). His grammatical rule and indeed his entire grammatical development is not a direct imitation nor a corruption of adult speech, but instead is an active construction, reflecting his level of intellectual maturity; in fact, Menyuk (1963) observed that the child exhibits difficulties in imitating utterances that are not based upon prior ability.

By age three, the child uses plurals (Ervin and Miller, 1963) and has progressed through three stages of development in the use of the interrogative (Bellugi, 1965). During the next three years, the child's vocabulary accelerates to approximately 2500 words. Past-tense and intention appear between ages 3-4 (Ervin-Tripp, 1970). As early as age four or five, the child uses all parts of speech and has unconsciously learned and intuitively uses rules of grammar to

express his ideas and manipulate his vocabulary into a variety of utterances, including clauses (Smith, 1926; McCarthy, 1954; Ervin and Miller, 1963).

At age six, reflecting changes in his cognitive development, the child tends to overgeneralize grammatical rules. For example, recently acquired rules for regular verbs, such as the past tense rule, are applied to all verbs, including irregular verbs that had been previously learned as single items and correctly used, but are now regularized and incorrectly formulated, such as "goed," "drunked," or "wetted." At this age, the average child has his phonemes under control except for sibilants, a voiced interdental, and a semi-vowel (hw) (Hodges, 1970). He can communicate effectively with his peers and adults, provided the intended meaning of the communication does not exceed his mental capabilities and experientially based concepts (Strickland, 1962; Singer, 1966; Goodman, 1966). Indeed, upon entrance to school, the average child, although not yet mature in vocabulary, memory ability, or cognitive level (Flavell, 1963; Bruner et al, 1966; Piaget, 1970) has a competence for generating novel grammatical sentences that approaches adult competence (Smith and Miller, 1966; McNeil, 1966), and tends to use his semantic and syntactic abilities in reading performance as early as the first grade level (Weber, 1970b).

Linguistic competence and performance continue to develop throughout the elementary years. Loban (1963) discovered that linguistic fluency increases each year. After the third grade, coherence of speech improves as a result of decrease in incidence and length of mazes ("tangles" of language). Improvement and control of language is not attained through changes in pattern of communication unit, but by degree of flexibility, expansion, and elaboration of units within one pattern. Children who are superior in control over their communication units also exhibit a greater degree of subordination, are more sensitive to language conventions, score higher on vocabulary and intelligence tests, and perform better in reading and writing. Although those who are least proficient in language tend to improve throughout the grades, the gap between the least and the most proficient widens.

Strickland (1962) also found significant relationships throughout the grades between structure of oral language and reading ability. At the second grade, superior readers used greater sentence length in oral language productions. At the sixth grade level, those who were high in oral and silent reading used greater sentence length, made more use of movables and subordination, had fewer short utterances, and used more common linguistic patterns in speech productions. In oral reading, the better readers were freer of errors. They were more fluent and used more appropriate phrasing and intonation. But, Strickland found that basal readers did not provide systematic control over sentence pattern and grammatical structure. When Ruddell (1965) did match fourth grader's text to their oral language sentence structures, controlling difficulty level, reading comprehension scores were significantly higher than on unmatched paragraphs.

Although the child is fairly competent at age six, grammatical development still continues. Carol Chomsky (1972) claims these developments follow a regular sequence of stages and represent a gradual reduction in disparity between child and adult grammar. The constructions involved in the five stages of acquisition of syntax during the elementary school years are represented by such constructions as "easy to see" in "The doll is easy to see" and "promise" in "Bozo promises Donald to lie down" and "ask" in "The girl asks the boy what to paint" and "although" in "Mother scolded Gloria for answering the phone, although I would have done the same." To correctly interpret the sentence and determine the deleted noun or verb phrase, Chomsky explains that "the child who had learned to choose the nearest preceding candidate in the surface structure of the sentence must recover the deleted items from the sentences' deep structure." Whether semantic complexity, as favored by Slobin (1966), or grammatical difficulty, as championed by C. Chomsky (1972) determines the developmental sequences represented by these stages is a current controversial issue (Wardhaugh, 1971).

Various theories have been proposed to explain the facts of language development. Athey (1971) and Wardhaugh (1971) identified behavioristic, nativistic, cognitive, psycholingustic, and information processing theories of language development, and three language-based models of reading, Ruddell's (1970), Goodman's (1970), and Brown's (1970). After reviewing the theories and the research literature, Wardhaugh concluded that behavioristic theories do not adequately account for the facts of language development for the following reasons: in addition to Chomsky's devastating critique of Skinner's verbal learning and verbal behavior theory, Maccorquodale's (1970) reply notwithstanding, he also cited the inability of children to imitate adult utterances that do not represent prior ability, the lack of a high correlation between word frequency and initial vocabulary acquisition, and linguistic generalizations which cannot be explained in relation to input data. Of all the theories, Wardhaugh believed Slobin's psycholinguistic theory to be most promising.

Slobin (1966a, 1966b) accepts Lenneberg's (1967) concept that language is a species-specific factor. But in contrast to McNeil's view (1966) Slobin thinks that linguistic universals are not innate content. Instead, Slobin's "Language Acquisition Device" for filtering and transforming incomplete and inadequate input into rule-ordered grammatical competence is the result of a cognitive processing mechanism. Development of language is thus controlled by cognitive abilities, such as memory storage, information processing, etc. These abilities increase with age and enable the individual to actively learn certain conceptual and semantic categories, which are the bases for the formation of syntactic structures and linguistic behavior that appears to be rule-governed.

Essentially in agreement with Wardhaugh, Athey (1971, p. 14) ends her evaluation of language models and reading with this conclusion:

> In essence, if the approach to understanding reading through the medium of theoretical models is a viable one,

> what seems to be called for is a cognitive theory (e.g. Piaget or Bruner), or a psycholinguistic theory that leaves room for learning (e.g. Slobin) or some composite of the two. Other theories such as that of Lenneberg or of the advocates of the information-processing approach, provide additional insights from the perspective of other disciplines, but the foundation lies essentially in some form of cognitive theory . . .

But, theories and models of language cannot be directly applied to reading because they are not identical in development, structure, or function. Oral language and reading acquisition, as Wardhaugh (1971) and others (Staats and Staats, 1962; Carroll, 1966; and Natchez, 1967) have stated, contrast in expected rate of acquisition, level of anxiety during acquisition, consciousness and deliberatedness of instruction, delay in reinforcement, and modalities involved in the processes. Within the receptive modalities, listening also differs from reading in locus of control over speed of processing stimuli, memory capabilities, degree of linguistic redundancy and formality, availability of suprasegmental and extralinguistic cues, and impact of social relationships and context (Singer, 1965a; Ruddell, 1966; Singer, 1967). Yet, even though "writing is not simply speech written down" (Wardhaugh, 1971, p. 190), an individual learns to relate phonological, morphological and lexical components to the functional units and spelling patterns of the writing system.

Writing System

English orthography is not an irregular or unlawful communication system (Gibson, 1965; Venezky, 1967; C. Chomsky, 1970; Gillooly, 1971). Nor is its 26 letter alphabet inadequate for representing some 46 phonemes; indeed, its combination of some 65 functional units is more than adequate (Venezky, 1967, 1970a, 1970b; Cronnel, 1971). Moreover, speech and writing are correlated but different representational systems, both related to common linguistic forms (Reed, 1965). English orthography is therefore regular but more complex than a phonetic or phonemic system. That is, rules exist, but the correspondence is between letters or letter sequences and morphophonemic structures. In short, English orthography represents elements of meaning (morphemes) as well as elements of sound (phonemes). Although this complexity may slow the rate of acquisition of correspondence rules, it does have compensatory advantages for rate of comprehension because spelling-meaning relationships are maintained for a large class of words which undergo a vowel shift in speech, but not in spelling. This vowel shift occurs, for example, in the words "nation" and "nationality." In reading, the addition of the suffix signals a vowel and form class change, but the lexical spelling is maintained (Chomsky and Halle, 1968; N. Chomsky, 1970; Gillooly, 1971).

Also, English orthography has an inherent advantage of greater dialect adaptability than a more phonetic or phonemic writing system because English orthography does not necessitate total phonological processing in order to relate graphic input to lexical forms. Consequently, English orthography may be more appropriate for the

range of regional, social and ethnic dialects than some transitional writing alphabet such as the readers printed in the initial teaching alphabet (i.t.a), which are keyed to a composite of four dialects spoken in Great Britain (Gillooly, 1971). Moreover, Chomsky (1970) has claimed that only to the extent that dialects differ at the syntactic and lexical but not at the phonological levels should they be a source of difficulty in reading English orthography. For all of these reasons, Chomsky has cited English orthography as a near-optimal representational system.

If we accept the validity of Chomsky's claim, then what we have to learn is how to exploit these properties of English orthography in teaching reading and spelling. For example, the word frequency principle for selecting and sequencing words used in most basal readers does not capitalize on the spelling-meaning aspect of English orthography in teaching reading. The hypothesis that such a capitalization may be beneficial to those whose dialect diverges significantly from "standard" English needs to be tested (Ives and Ives, 1969; C. Chomsky, 1970; Gillooly, 1971). This instructional input may also be advantageous to the reading acquisition behavior of children who speak "standard" English because the dual structure of English orthography would develop both lexical and phonological correspondences whereas a more phonemic or phonetic writing system would tend to emphasize only phonological correspondence. Indeed, this hypothesis could explain why a group taught by the initial teaching alphabet was superior on word recognition to another group taught by English orthography but on paragraph comprehension there was no difference (Gillooly, 1971). The hypothesis that needs to be tested is that the group taught by English orthography offset its word recognition disadvantage by compensation in development of spelling-word meaning relationships (Singer, 1971).

Further comparison of the effects of a simulated transitional writing system on reading achievement can be gleaned from Ruddell's (1965b, 1968) comparison of Sullivan's programmed instruction with its sequence of regularly spelled words versus a basal reader method of instruction with its word frequency selection. In the first year of the program, the advantage was to Sullivan's program, but the opposite was true the second year. The explanation again might be that the Sullivan material was primarily developing phonological correspondence rules which facilitated word recognition development in the initial stage, but the basal reader was developing more complex phonological and lexical correspondence rules which paid off over the long run.

Dialect

There is a far greater mismatch in the correspondence between text and minority dialects. But, whether dialect interferes with reading acquisition is not just a function of orthography or whether the dialect divergence is lexical or syntactical. The relationship between dialect and reading achievement is also a function of how teachers present stimuli and evaluate responses. For example, Melmed (1971) demonstrated that black children performed lower on auditory discrimination of words which included homonyms in black phonology (sick,

six) when presented in isolation, but did not differ significantly from whites on oral and silent reading when these same homonyms were presented in context. Furthermore, there may be less of a relationship between dialect and reading than we suppose: Mitchell-Kernan (1969) reported that syntactic variations in speech of Black English were not related to difficulties in comprehending standard English; also, lower-class black pupils are capable of understanding their own dialect and their teacher's, but white teachers are less proficient in understanding black dialect.

In general, there is a mismatch between the dialect of all children and the text because the widely-used basal reader is written in a dialect unfamiliar to all children (Weber, 1970a), yet most children apparently adapt and achieve expected progress in reading. Indeed, dialect differences may be overemphasized by some teachers as a cause of poor reading (Crowl and McGinitie, 1970), or teachers may have low expectations for speakers of low-status dialects and attribute their "errors" to linguistic deficiency (Goodman, 1970).

Actually Black English is an "adequate language, well-ordered, structured, and developed" (Wardhaugh, 1969). What the teacher may misconstrue as an error may be merely a recoding or encoding of the message into black dialect. Even so, less black dialect is used for reading reception and encoding than for oral production (Rosen and Ortego, 1969). In general, whether the child is making a dialect or a real "error" should depend on knowledge of Black English (Labov, 1969) and the child's comprehension. If the child recodes or encodes in his own dialect, but demonstrates comprehension of the message, then it is more likely to be merely dialect recoding or encoding, not an error response.

What may be categorized as a dialect difficulty could sometimes be a confounding of Black English with a "restricted code" (Bernstein, 1970). That is, the language of lower class homes and middle-class dominated schools may represent a discontinuity in style of communication, as well as in curriculum (Strodtbeck, 1964). Used to extralinguistic situational signs to facilitate interpretation of a restricted code, the lower class reader may be at a disadvantage with his middle class Anglo peer who is inured to verbal context (Entwisle, 1971). However, as a working hypothesis, one remedy would be to maximize extralinguistic cues during instruction: use pictures, stress intonation patterns (Lefevre, 1964), or give children dramatic type instructions for generating various responses to graphic stimuli (Martin, 1966).

Various strategies have been formulated for teaching dialectally different children, including use of a language experience approach (Cramer, 1971), teaching the child to read his own dialect first (Baratz and Shuy, 1969), using "neutral materials" (Goodman, 1965), acceptance of recoding (Wolfram, 1970) or teaching standard English before instituting reading instruction (Modiano, 1968; Rystrom, 1970). So far, there has been no real test of the alternatives for black children (Baratz, 1971), but some tests have been conducted on Chicano children (Yoes, 1967; Rosen and Ortego, 1969; Feeley, 1970; Ramirez, 1970).

However, the validity of the tests is difficult to assess because dialects tend to merge into bilingualism, especially for Chicano and some other minority groups whose backgrounds include another language (Singer, 1956; Lucas and Singer, 1972). Nevertheless, for these minority groups it may be critical to have an adapted or compensatory curriculum or summer session program in the primary grades that will enable them to attain a level of reading ability at which their reading achievement can become cumulative in a normal curriculum as early as possible (Ruddell and Williams, 1972; Singer, 1972).

Reading Process: Acquisition and Development to Maturity

Linguistic analysis has also led to insights into the reading process. Individuals appear to discriminate letters according to their distinctive features and act as though they had rules for grapheme-phoneme relationships. But, it is doubtful whether the process necessarily involves recoding to speech and then responding to the recoded stimulus as a hearer would to auditory perceptions because deaf children's reading behavior appears to exhibit the same rule-governed phonographic correspondence as that of normal hearing subjects (Gibson, 1965). Whether the beginning reader has to recode to speech could depend on how he is taught (Buswell, 1945; Singer, 1968). But, regardless of his initial reading acquisition process, as he matures in reading, he tends to shift to a process of sampling the text in a search for information (Hochberg, 1970) or to a reduction in uncertainty (Smith, 1971). Drawing upon his 'word sense" (Holmes, 1954) or upon his knowledge of linguistic constructs and redundancies, the reader forms expectancies at the letter, word, and phrase level that are confirmed by printed stimuli and by constraints at the orthographic, context, and intrasentence levels, respectively. Wanat (1971) characterizes this process as a chaining of alternations from stimulus to context and back to stimulus with hypothesis or expectations forming and being confirmed throughout the process.

Some theoretical insight into a cause of the rate of change in this developmental reading process has been formulated by C. Chomsky (1970). She has argued that the lexical representation of English orthography could be more systematically exploited to facilitate an early shift from phonological processing of stimuli to "lexical reading." That is, instead of first orally reconstructing the printed message through phonological processes to attain a surface structure phonetic representation and then associating meaning in ways analogous to listening comprehension, lexical reading avoids phonological processing and goes more directly to underlying forms and then to a semantic interpretation. She hypothesizes that some readers may not have progressed from phonological processing to lexical reading as rapidly as they could have because in the initial stage of learning to read they assume that there is letter sound regularity, an assumption they must "abandon for the more realistic view of spelling regularity based on word relationships and underlying lexical similarities" in order to eventually interpret written symbols as corresponding to more abstract lexical representations. Lack of this trans-

ition may be a consequence for some poor readers, in part, because of their immature phonological system and inadequate stock of morphemes and lexicon.

To facilitate a shift from phonological to lexical interpretation of the spelling system, she stresses further development of the child's phonological system and phonological processing in decoding written English. For this purpose, she advises discussing "word families" in order to emphasize the range of pronunciations associated with spelling patterns. This teaching strategy may also optimize development of morphological and lexical systems. Then, as soon as vocabulary development permits it, shifting to word-groups like "history-historical -historian" to show how different endings affect the pronunciation of the root and to demonstrate maintenance of the correspondence between the root and its lexical forms. With progress in directly relating English orthography to lexical forms, a reader could become a truly silent reader, minimizing phonological processing, and consequently reading almost entirely at the lexical level.

This explanation and input strategy might help resolve the controversy over oral reconstruction or reading mediated by speech as a necessary first stage in reading (Gibson, 1965; Biemiller and Levin, 1968). It may also help explain why some investigators and theorists have identified two types of readers, auditory-motor and visual (Huey, 1901; Bower, 1970; Hochberg, 1970). That is, some individuals may be in one category or the other because of some personal characteristics, but another reason could be based upon the assumption that the auditory-motor type represents an oral reconstruction stage while the visual type has progressed to a more mature stage of silent reading ability in which his process of reading does not require phonological processing and converting orthographic forms to the surface phonetic level but can relate such forms more directly to the lexical level.

Summary and Implications for Reading Theory and Practice

Linguistic inquiry over the past 15 years has increased our knowledge of the facts of language development and provided evaluative criteria for determining adequacy of theoretical interpretations of these facts. From this body of knowledge, we can abstract implications for reading theory, research, and practice:

Evidence on language development indicates that the average child has a well, but not completely developed oral communication system at age six when formal instruction is initiated. Whether direct instruction, such as sentence expansion (Wardhaugh, 1971), will accelerate this development is problematical. But, such a stimulating language environment will at least provide the child with necessary input data for abstracting, constructing, and reconstructing his degree of linguistic competence as his cognitive processing mechanisms and other capabilities mature and develop (Slobin, 1968). Also, since matching text to oral language sentence structure is likely to facilitate comprehension (Ruddell, 1965a), an acquisition procedure, such as the language-experience approach is indicated, but this approach

should be balanced with a pacing procedure to promote development of language processing ability.

Linguistic and cognitive, as well as other components, such as perceptual, affective, and physiological, enter into functional relationships with each other and with orthographic stimuli as the individual acquires competence and performs in reading. The evidence suggests that at least in the initial state of reading development the graphophonological relationships appears to be superior. For example, Ruddell (1968) found when instruction in syntax and morphemes was added to Sullivan's primarily phonological approach, children's reading ability improved as compared with reading achievement obtained through programed instruction or basal reader alone, and over a two-year period the basal reader was superior to programed instruction. Better teachers might be developing more competent and better performing readers by similarly providing comprehensive instruction for all the necessary subsystems and for adapting instruction to individual differences in children's styles of learning. Perhaps this rationale might account for the wide variation within method of instruction found in the First Grade Studies (Bond and Dykstra, 1967; Singer, 1968).

The theoretical as well as practical hypothesis that needs to be investigated is whether diverse input programs eventually converge on the same mental organization for reading, or whether there are persistent differences in reading behavior or processes as a consequence of initial type of input (Singer, 1968). Carol Chomsky's hypothesis that capitalizing on the lexical-spelling aspect of English orthography will facilitate progress from more phonological to more lexical, or from oral reconstruction or a speech-mediated process to a more direct route for decoding the intended message needs to be tested not only with children, in general, but also with such known groups as dialectally different children. Likewise, Bloomfield's (1942) hypothesis on orthographic regularity and Fries' (1963) hypothesis on contrastive spelling patterns need to be tested on known groups. Some experimentation with these hypotheses have already been conducted (Skailand, 1970) but much more experimentation is needed. Perhaps we will discover when and how and for whom we should adapt input systems to individual differences among children, as Bond (1935) and Fendrick (1935) had once tried to do but with less adequate control over the input stimuli.

We now realize that as individuals mature in reading, they quantitatively and qualitatively reorganize the factors mobilized for attaining speed and power of reading (Singer, 1964, 1965). Moreover, they attain greater control and flexibility over their reading process and can shift from graphophonological to grapholexical reading or from systematic, sequential reading to sampling of the text in search of information, hypothesis confirmation, or reduction of uncertainty. Such control may be related to instructional procedures for developing active readers who learn to formulate questions, develop expectations, and read to answer their own questions (Singer, 1971). Strategies have to be devised for maximizing the development

of an active, critical, and inquiring reader. Progress has already been made in this direction; particularly well known is the SQ3R method, which was devised as a study skill but which can be adapted to general reading instruction (Robinson, 1961; Gilbert, 1956). Some cognitive instructional strategies have also been formulated (Taba, 1965; Taba et al., 1964) and tested in reading instruction (Ruddell and Williams, 1972). Also, children can probably be taught to utilize more effectively and efficiently the linguistic markers, signals, determiners, and other cues to reading comprehension, as McCullough (1972) has suggested.

To translate these hypotheses into classroom practice will require several stages of development before they are in a form useable by teachers. Materials will have to be constructed, teaching strategies devised, lesson plans and teacher manuals prepared before the hypotheses can be tested under controlled classroom situations. If this procedure is followed, then we are likely to find that basic research will be translated into classroom practice (Singer, 1971).

Ames, Wilbur S.; Carl L.; and Olson, Arthur V.
The effects of nonstandard dialect on the oral reading behavior of fourth grade black children. In Carl Braun (Editor), Language, Reading and the Communication Process. Newark, Delaware: International Reading Association, 1971.

Athey, Irene J.
Reading-Personality Patterns at the Junior High School Level. Doctoral Dissertation. Berkeley: University of California, 1965.

Athey, Irene J.
Affective factors in reading. In Harry Singer and Robert B. Ruddell (Editors), Theoretical Models and Processes of Reading. Newark, Delaware: International Reading Association, 1970, Pp. 98-119.

Athey, Irene J.
Language models and reading. Reading Research Quarterly, 7, 1971, Pp. 9-110.

Athey, Irene J. and Holmes, Jack A.
Reading Success and Personality Characteristics in Junior High School Students. Berkeley: University of California Press, 1969.

Bayley, Nancy
Consistency and variability in the growth of intelligence from birth to eighteen years. Journal of Genetic Psychology, 75, 1949, Pp. 165-196.

Baratz, Joan
Teaching reading in an urban Negro school system. In Joan Baratz and Roger Shuy (Editors), Teaching Black Children to Read, Washington, D. C.: Center for Applied Linguistics, 1969.

Baratz, Joan
A review of research on the relationship of Black English to reading. Paper presented at International Reading Association's Annual meeting, Atlantic City, 1971.

Baratz, J. and Shuy, R. W.
Teaching Black Children to Read. Washington, D. C.: Center for Applied Linguistics, 1969.

Bellugi, V.
The development of interrogative structure in children's speech functions. In K. Riegel (Editor), The Development of Language Functions. Ann Arbor: University of Michigan Press, 1965.

Bernstein, B.
Language and social class. British Journal of Sociology, 11, 1960, Pp. 271-276.

Biemiller, A. J. and Levin, H.
Studies of oral reading, II, Pronounceability. In H. Levin, E. J. Gibson, and J. J. Gibson (Editors), The Analysis of Reading Skill, A Program of Applied and Basic Research Theory. New York: Cornell University, 1968, Pp. 116-125.

Bloomfield, Leonard
Language. New York: Henry Holt and Co., 1933.

Bloomfield, L.
Linguistics and reading. Elementary English Review, 19, 1942, Pp. 125-130; 183-186.

Bond, Guy L.
The Auditory and Speech Characteristics of Poor Readers. Teachers College Contributions to Education, No. 657, 1935.

Bond, Guy L. and Dykstra, Robert
The cooperative research program in first grade reading instruction. Reading Research Quarterly, 2, 1967, Pp. 5-142.

Bower, Thomas G. R.
Reading by eye. In Harry Levin and Joanna Williams (Editors), Basic Studies in Reading. New York: Basic Books, 1970.

Braine, M. D.
The ontogeny of English phrase structure: the first phase. Language, 39, 1963, Pp. 1-13.

Brown, E. R.
Bases of reading acquisition. Reading Research Quarterly, 6, 1970, Pp. 49-74.

Bruner, J. S., Olver, R. R., and Greenfield, P. M.
Studies in Cognitive Growth. New York: Wiley, 1966.

Buswell, Guy T.
Non-Oral Reading--A Study of Its Use in the Chicago Public Schools. Chicago: University of Chicago Press, 1945.

Carroll, J. B.
Some neglected relationships in reading and language learning. Elementary English, 43, 1966, Pp. 577-582.

Chomsky, Carol
Reading, writing, and phonology. Harvard Educational Review, 40 (May), 1970, Pp. 287-309.

Chomsky, Carol
Stages in language development and reading exposure. Harvard Educational Review, 42, 1972, Pp. 1-33.

Chomsky, Noam
Syntactic Structures. The Hague: Mouton, 1957.

Chomsky, Noam
Phonology and reading. In Harry Levin and Joanna Williams (Editors), Basic Studies on Reading. New York: Basic Books, 1970, Pp. 3-18.

Chomsky, N. and Halle, M.
The Sound Pattern of English. New York: Harper and Row, 1968.

Corder, Reginald
The Information Base for Reading. Final Report, Project No. 0-9031, U. S. Office of Education, National Center for Educational Research and Development, 1971.

Cramer, R. L.
Dialectology--a case for language experience. Reading Teacher, October, 1971, Pp. 33-39.

Cronnel, B. A.
Spelling-to-sound correspondences for reading v.s. sound-to-spelling correspondences for writing. Paper read at the American Educational Research Association, New York, February, 1971.

Crowl, T. K. and MacGinitie, W. H.
White teachers' evaluations of oral responses given by white and Negro ninth-grade males. Proceedings of the 75th Annual Convention, American Psychological Association, 1970.

Davis, Fred (Editor)
The Literature of Research in Reading with Emphasis on Models. New Brunswick, New Jersey: Rutgers University, 1971.

Entwisle, Doris R.
Implications of language socialization for reading models and for learning to read. In Fred Davis (Editor), The Literature of Research in Reading with Emphasis on Models. New Jersey: Rutgers University, 1971, Pp. 101-158.

Ervin-Tripp, S. M.
Discourse agreement" how children answer questions. In J. R. Jayes (Editor) Cognition and the Development of Language. New York: Wiley, 1970.

Ervin, Susan M. and Miller, W. R.
Language development. Sixty Second Yearbook of the National Society for the Study of Education, Part I. Chicago: University of Chicago Press, 1963, Pp. 108-143.

Feeley, Joan T.
Teaching non-English speaking first graders to read. Elementary English, 47, 1970, Pp. 199-208.

Fendrick, P.
Visual Characteristics of Poor Readers. Teachers College Contributions to Education, No. 656, 1935.

Flavell, John H.
The Developmental Psychology of Jean Piaget. Princeton, New Jersey: Van Nostrand, 1963.

Fries, C. C.
Linguistics and Reading. New York: Holt, Rinehart, and Winston, 1963.

Gelb, I. J.
A Study of Writing, Second Edition. Chicago, Illinois: University of Chicago Press, 1963.

Gibson, Eleanor J.
Learning to read. In H. Singer and R. Ruddell (Editors) Theoretical Models and Processes of Reading. Newark, Delaware: International Reading Association, 1970, Pp. 315-334.

Gilbert, D. W.
Power and Speed in Reading. Englewood Cliffs, New Jersey: Prentice Hall, 1956.

Gillooly, William B.
The influence of writing system characteristics on learning to read. In Fred Davis (Editor), The Literature of Research in Reading with Emphasis on Models. New Brunswick, New Jersey: Rutgers University, 1971, Pp. 7; 21-44.

Goodman, K. S.
Dialect barriers to reading comprehension. Elementary English, 42, 1965, Pp. 853-860.

Goodman, K. S.
A psycholinguistic view of reading comprehension. In George B. Schick and Merrill M. May (Editors), New Frontiers in College-Adult Reading, Fifteenth Yearbook of the National Reading Conference. Milwaukee, Wisconsin: The National Reading Conference, 1966, Pp. 188-196.

Goodman, Kenneth S.
Reading: a psycholinguistic guessing game. In H. Singer and R. Ruddell (Editors), Theoretical Models and Processes of Reading, Newark, Delaware: International Reading Association, 1970 (a), Pp. 259-272.

Goodman, K. S.
Comprehension-centered reading. Claremont Reading Conference, Thirty-Fourth Yearbook, 1970 (b), Pp. 125-134.

Goodman, K. S.
The reading process: theory and practice. In Richard Hodges and E. Hugh Rudorf (Editors), Language and Learning to Read. New York: Houghton Mifflin, 1972, Pp. 143-159.

Hochberg, J.
Components of literacy: speculations and exploratory research. In H. Levin and J. P. Williams (Editors), Basic Studies on Reading. New York: Basic Books, 1970, Pp. 74-89.

Hodges, Richard E.
Language development in the school years. In Albert H. Marckwardt (Editor), Linguistics in School Programs. The Sixty Ninth Yearbook of the National Society for the Study of Education, Part II. Chicago, Illinois: University of Chicago Press, 1970, Pp. 215-228.

Holmes, Jack
Factors underlying major reading disabilities at the college level. Genetic Psychology Monographs, 49, 1954, Pp. 3-95.

Huey, E. B.
On the psychology and physiology of reading. American Journal of Psychology, 1901, 12, Pp. 292-313.

Ives S. and Ives, J.
Linguistics and reading. In A. H. Marckwardt (Editor), Linguistics in School Programs. Chicago: National Society for the Study of Education, 1969.

Labov, William
Stages in the acquisition of standard English. In Roger W. Shuy (Editor), Social Dialects and Language Learning. Champaign, Illinois: National Council of Teachers of English, 1965, Pp. 77-103.

Labov, W.
Some sources of reading problems for Negro speakers of non-standard English. In J. Baratz and R. Shuy (Editors), Teaching Black Children to Read. Washington, D. C.: Center for Applied Linguistics, 1969.

Labov, W.
The Study of Nonstandard English. Champaign, Illinois: National Council of Teachers of English, 1970.

LeFevre, Carl
Linguistics and the Teaching of Reading. New York: McGraw Hill, 1964.

Lenneberg, E. H.
Biological Foundations of Language. New York: Wiley, 1967.

Loban, Walter D.
The Language of Elementary School Children. Champaign, Illinois: National Council of Teachers of English, 1963.

Lucas, Marilyn S. and Singer, Harry
Dialect in relation to reading achievement: recoding, encoding, or merely a code? Paper read at the California Educational Research Association, 1971.

McCarthy, Dorothea A.
Language development in Children. In L. Carmichael (Editor), Manual of Child Psychology. New York: Wiley, 1954, Pp. 492-630.

Maccorquodale, K.
On Chomsky's review of Skinner's verbal behavior. Journal of Experimental Analysis of Behavior, 13, 1970, Pp. 83-99.

McCullough, Constance M.
What should the reading teacher know about language and thinking. In Richard E. Hodges and E. Hugh Rudorf (Editors), Language and Learning to Read. New York: Houghton-Mifflin, 1972, Pp. 202-215.

McNeil, D.
Developmental psycholinguistics. In F. Smith and G. A. Miller (Editors), The Genesis of Language: A Psycholinguistic Approach. Cambridge, Mass.: M. I. T. Press, 1966, Pp. 15-84.

Martin, Bill
Sounds of Language Readers. See Sounds of Home, Teacher Edition in this series. New York: Holt, Rinehart and Winston, 1966.

Melmed, Paul J.
Black English phonology: the question of reading interference. Monographs of the Language-Behavior Research Laboratory, No. 1, Berkeley: University of California, 1971.

Menyuk, Paula
Syntactic structures in the language of children. Child Development, 34 (June, 1963), Pp. 407-422.

Mitchell-Kernan, C.
Language Behavior in a Black Urban Community. Doctoral Dissertation, University of California, Berkeley, 1969.

Modiano, N.
National or mother language in beginning readers? A comparative study. Research in the Teaching of English, 1968, 1, Pp. 32-43.

Natchez, Gladys
From talking to reading without really trying. The Reading Teacher, 20, 1967, Pp. 339-342.

Piaget, J.
Piaget's theory. In Paul H. Mussen (Editor), Carmichael's Manual of Child Psychology, Vol. I, Third Edition. New York: Wiley, 1970, Pp. 707-732.

Ramirez, M.
The bilingual program bandwagons and the psychodynamics of the Chicano child. Claremont Reading Conference, Thirty-Fourth Yearbook, 1970, Pp. 68-72.

Reed, David
A theory of language, speech, and writing. Elementary English, 1965, 42, Pp. 845-851.

Reed, David
Linguistic forms and the process of reading. In Harry Levin and Joanna Williams (Editors), Basic Studies on Reading. New York: Basic Books, 1970, Pp. 19-29.

Robinson, Francis P.
Effective Study, Revised Edition. New York: Harper, 1961.

Rosen, C. L. and Ortego, P. D.
Issues in language and reading instruction of Spanish speaking children. Newark, Delaware: International Reading Association, 1969.

Rosenblatt, Louise M.
Literature as Exploration. New York: Noble, 1968.

Ruddell, Robert B.
The effect of the similarity of oral and written patterns of language structure on reading comprehension. Elementary English, 42, 1965 (a), Pp. 845-851.

Ruddell, R. B.
The Effect of Four Programs of Reading Instruction with Varying Emphasis on the Regularity of Grapheme-phoneme Correspondence and the Relation of Language Structure to Meaning on Achievement in First Grade Learning. Berkeley: University of California, 1965 (b).

Ruddell, R. B.
Oral language and the development of other language skills. Elementary English, 43, 1966, Pp. 489-498.

Ruddell, R. B.
A Longitudinal Study of Four Programs of Reading Instruction Varying in Emphasis on Regularity of Grapheme-Phoneme Correspondence and Language Structure on Reading Achievement in Grades Two and Three. Berkeley: University of California, 1968.

Ruddell, R. B.
Language acquisition and the reading process. In Harry Singer and Robert B. Ruddell, Theoretical Models and the Processes of Reading. Newark, Delaware: International Reading Association, 1970, Pp. 1-19.

Ruddell, R. B.
Psycholinguistic implications for a systems of communication model. In Harry Singer and Robert B. Ruddell (Editors), Theoretical Models and Processes of Reading. Newark, Delaware: International Reading Association, 1970, Pp. 239-258.

Ruddell, Robert B. and Williams, Arthur C.
A Research Investigation of a Literacy Teaching Model. Final Report, U. S. Department of Health, Education, and Welfare, Office of Education, EPDA Project No. 005262, 1972.

Russell, David H.
The Dynamics of Reading. Edited by Robert B. Ruddell, Waltham, Massachusetts: Ginn-Blaisdell, 1970.

Rystrom, R.
Negro speech and a reply. Reading Research Quarterly, 1970, 6, Pp. 123-125.

Singer, Harry
Bilingualism and elementary education. Modern Language Journal, 40, 1956, Pp. 444-458.

Singer, H.
Substrata-factor patterns accompanying development in power of reading, elementary through college levels. In E. Thurston and L. Hafner (Editors), Philosophical and Social Bases of Reading. Milwaukee: National Reading Conference, 1964, Pp. 41-56.

Singer, H.
Developmental changes in the subsystems of reading and listening. Paper Abstracts, Washington, D. C.: American Educational Research Association, 1967, P. 127.

Singer, H.
Validity of the Durrell-Sullivan Reading Capacity Test. Journal of Educational and Psycholinguistical Measurement, 23, 1965, Pp. 479-491.

Singer, H.
A developmental model for speed of reading in grades three through six. Reading Research Quarterly, 1, 1965 (b), Pp. 29-49.

Singer, H.
Conceptualization in learning to read. In George B. Schick and Merrill M. May (Editors), Fifteenth Yearbook of the National Reading Conference, 1966, Pp. 116-132.

Singer, H.
Stimulus models for teaching reading. In Margaret M. Clark and Sheena M. Maxwell (Editors), Reading: Influences on Progress. Proceedings of the Fifth Annual Study Congress of the United Kingdom Reading Association, 1968, Pp. 112-119.

Singer, H.
Theoretical models of reading. Journal of Communication, 19, 1969, Pp. 134-156.

Singer, H.
Research that should have made a difference. Elementary English, 47, 1970, Pp. 27-34.

Singer, H.
Theories, models, and strategies for learning to read. In Fred Davis (Editor), The Literature of Research in Reading with Emphasis on Models. New Brunswick, New Jersey: Rutgers University, 1971.

Singer, Harry and Ruddell, Robert B.
Theoretical Models and Processes of Reading. Newark, Delaware: International Reading Association, 1970.

Singer, H.
Review of Ruddell and Williams' Final Report on Literacy Teaching Model. Journal of Reading Behavior, 1972 (in press).

Skaeland, Dawn B.
A comparison of four language units in teaching beginning reading. Unpublished doctoral dissertation. Berkeley, California: University of California, 1970.

Slobin, D. I.
The acquisition of Russian as a native language. In F. Smith and G. A. Miller (Editors), The Genesis of Language: A Psycholinguistic Approach. Cambridge, Mass.: M. I. T. Press, 1966. (a)

Slobin, D. I.
Comments on developmental psycholinguistics. In F. Smith and G. A. Miller (Editors), The Genesis of Language: A Psycholinguistic Approach. Cambridge, Mass.: M. I. T. Press, 1966 (b).

Slobin, D. I.
Imitation and grammatical development. In N. S. Endler, L. R. Boulter, and H. Osser (Editors), Contemporary Issues in Developmental Psychology. New York: Holt, Rinehart, and Winston, 1968.

Smith, Frank
Understanding Reading: A Psycholinguistic Analysis of Reading And Learning To Read. New York: Holt, Rinehart, and Winston, 1971.

Smith, Medorah E.
An investigation of the development of the sentence and the extent of vocabulary in young children. University of Iowa Studies of Child Welfare 3: No. 5, 1926.

Smith, F. and Miller, G. A. (Editors)
The Genesis of Language: A Psycholinguistic Approach. Cambridge, Mass.: M. I. T. Press, 1966.

Staats, A. W. and Staats, C. K.
A comparison of the development of speech and reading behavior with implications for research. Child Development, 1962, 33, Pp. 831-846.

Stewart, W. A.
On the use of Negro dialect in the teaching of reading. In Joan C. Baratz and R. W. Shuy (Editors), Teaching Black Children to Read. Washington, D. C.: Center for Applied Linguistics, 1969.

Strickland, Ruth G.
The Language of Elementary School Children: Its Relationship to the Language of Reading Textbooks and the Quality of Reading of Selected Children. Bulletin of the School of Education, 38 (July, 1962). Bloomington, Ind.: Indiana University.

Strodtbeck, Fred L.
The hidden curriculum in the middle class home. In C. W. Hunnicutt (Editor), Urban Education and Cultural Deprivation, Syracuse, New York: Syracuse University Press, 1964, Pp. 15-31.

Taba, Hilda, Levine, Samuel, and Elzey, Freeman F.
Thinking in Elementary School Children. U. S. Office of Education Cooperative Research Project No. 1574. San Francisco, California: San Francisco State College, 1964.

Taba, Hilda
The teaching of thinking. Elementary English, May, 1965, Pp. 534-542.

Venezky, R. L.
English orthography: its graphical structure and its relation to sound. Reading Research Quarterly, 2, 1967, Pp. 75-105.

Venezky, R. L.
Regularity in reading and spelling. In Harry Levin and Joanna Williams (Editors), Basic Studies in Reading. New York: Basic Books, 1970 (a) Pp. 30-42.

Venezky, R. L.
Linguistics and spelling. In Albert H. Marckwardt (Editor), Linguistics in School Programs. The Sixty-Ninth Yearbook of the National Society for the Study of Education, Part II. Chicago, Illinois: University of Chicago Press, 1970 (b), Pp. 264-274.

Wanat, Stanley
Linguistic structure in reading. In Fred Davis (Editor), The Literature of Research in Reading with Emphasis on Models. New Brunswick, New Jersey: Rutgers University, 1971, Pp. 8-155-177.

Wardhaugh, R.
Reading: A Linguistic Perspective. New York: Harcourt, Brace, and World, 1969.

Wardhaugh, R.
Theories of language acquisition in relation to beginning reading instruction. Reading Research Quarterly, 7, 1971, Pp. 168-194.

Weber, R. M.
Some reservations on the significance of dialect differences to the acquisition of reading. Paper read at the International Reading Association, Anaheim, California, 1970 (a).

Weber, R. M.
First graders' use of grammatical context in reading. In Harry Levin and Joanna Williams (Editors), Basic Studies in Reading. New York: Basic Books, 1970 (b), Pp. 147-163.

Wolfram, W.
Sociolinguistic alternatives to teaching reading to non-standard speakers. Reading Research Quarterly, 6, 1970, Pp. 9-33.

Yoes, D. I.
Reading programs for Mexican-American children of Texas, Reading Teacher, June 1967, Pp. 20, 313-318, 323/

What Interests Psycholinguistic Researchers?

Patrick J. Finn

In his classic work Language (1933) Leonard Bloomfield commented that language was being studied by two groups of scholars, those interested in behavioral psychology and those interested in structural linguistics. He further observed that communication between the two was necessary. The impetus toward cooperation and communication among scholars interested in the study of language is reflected in the titles of books that are now standard readings in the field: Psycholinguistics: A Survey of Theory and Research Problems (1953) edited by Charles Osgood and Thomas Sebeok and Psycholinguistics: A Book of Readings (1961) edited by Sol Saporta. Chomsky published Syntactic Structures in 1957 and Aspects of the Theory of Syntax in 1965. Chomsky's theory challenged the validity of many theories put forth by behavioral psychologists, structural linguists, and communication theory people.

There was a great flurry of experiments designed to determine the applicability of Chomsky's theory to the study of language by psychologists. What follows are resumes of several such experiments that will acquaint the reader with the issues and the methods employed by psychologists. The last resume is a very brief outline of a long article by Thomas G. Bever published in 1970. It is hoped that the reader will get a flavor of the widened scope and complexity of the issues which have interested psycholinguists in very recent years.

"Grammatical Transformations and Speed of Understanding"

by P. B. Gough

Gough hypothesizes that Ss must detransform complex sentences to kernels to get their meaning. Therefore, understanding a passive negative transformation would take longer than understanding a passive (but not negative), and it would take longer to understand than a kernel. (K P PN)

Ss (21 general psychology students) were presented pictures of a boy or girl hitting a boy or girl (4 pictures), these pairs with one kicking the other (4 pictures), and the mirror images of these 8 pictures, 16 stimuli in all. Eight kernel sentences correlated to the pictures. From these, 8 negative, 8 passive, and 8 N-P transformations were derived. The experimenter read a sentence, showed a picture, and the S was to affirm or deny the truth of the statement by pushing a true or a false button.

Mean Verification Time (Ss made fewer than 3 errors per 128 responses. These were counted correct.)

	Affirmative		Negative	
	true	false	true	false
Active	.92	1.06	1.30	1.28
Passive	1.01	1.20	1.35	1.36

The differences are significant and are an impressive affirmation of the hypothesis. The fact that true statements were verified faster than false statements appears to be due to a semantic difference.

The verification process needs further study, but this experiment makes one model untenable: The S compares each component s-v-o with its referent in serial fashion, and finding no discrepancy, he affirms the statement. If this were true, the S would respond with a denial more quickly than he could affirm.

The experiment affirms but does not prove Gough's hypothesis. Difference in sentence length corresponds to verification time. Also the fact that active voice occurs more frequently than passive, and affirmative more frequently than negative statements may also explain the difference in verification time.

"Role of Surface and Base Structure in the Perception of Sentences"

by J. Mehler and Peter Carey

Demonstrating that Ss'expectation of a certain base or surface structure impedes perception of sentences with different structures will confirm the hypothesis that in processing sentences Ss make use of both surface structure and base structure. The following series were tape recorded in a monotone:

a. Ten sentences with surface structure <u>They are forecasting cyclones</u> (Type 1) followed by test sentence <u>They are recurring mistakes</u> (Type 2).
b. Ten sentences with surface structure <u>They are conflicting desires</u> (Type 2) followed by test sentence <u>They are describing events</u> (Type 1).
c. Ten sentences with base structure <u>They are delightful to embrace</u> (Type 3) followed by test sentence <u>They are reluctant to consent</u> (Type 4).
d. Ten sentences with base structure <u>They are hesitant to travel</u> (Type 4) followed by test sentence <u>They are troublesome to employ</u> (Type 3).

In order to determine that the score on the test item was truly determined by syntactic processes and not artifactual acoustic cues, the test item in each set was used as the tenth item in the set of surface or base structures which it represented. Ss were told to listen and write each sentence. They were told that the first two words of every sentence would be they are. Twenty-three Ss heard types 1 and 4 with their test items. Twenty-two Ss heard types 2 and 3 and their test items. Thus, each group was presented the test items of the other in a control position.

Results:	Sentence	Control	Test
	They are recurring mistakes		
	Right	15	1
	Wrong	7	22
	They are describing events		
	Right	21	9
	Wrong	2	13
	They are reluctant to consent		
	Right	7	5
	Wrong	16	17
	They are troublesome to employ		
	Right	12	8
	Wrong	10	15

They are reluctant to consent is obviously difficult to perceive since the responses in control position are not significantly more accurate than in the test position. The experiment shows that deep and surface structure can be induced in Ss.

"The Influence of Syntactical Structure on Learning"

by W. Epstein

Problem: How can one separate syntactical structure from meaningfulness, probability, and familiarity and study the influence of syntactical structure on learning?

Procedure: Six categories of 2 "sentences" each were invented. Each was printed horizontally on a card. The categories were: I. Two function words plus nonsense syllables affixed with noun markers, verb markers, etc., in such order as to simulate English syntax. II. Same syllables in the same order, but without grammatical affixes. III. Exact "words" as I, but arranged in random order. IV. Same order as I, but affixes shifted to a pattern not similar to English syntax. V. Real words whose order meets demands of English syntax but yields no meaning. VI. Same words as V, but in random order.

Categories I, III, and V were given the further appearance of sentences beginning with capital letters and ending with periods. The remaining categories received no capital letter or period. 192 Ss (psychology students) were randomly assigned to 6 groups. Each group was asked to memorize 1 category (2 sentences in each--1/2 the group given sentence 1 first, the others given 2 first). Trials were repeated until performance was perfect.

Result:	Category	I	II	III	IV	V	VI
	Mean trials	5.7	7.56	8.15	6.90	3.50	5.94

There are significant differences between I & II, I & III, I & V, and V & VI. Lack of expected difference between I & IV may be explained by the presence of grammatical tags in IV. Ss may have reconstructed material into syntactically meaningful units. Perhaps this affirms Osgood's analysis that the frequency with which grammatical redundancy occurs in language results in strong predictive integrations in the nervous system that match the structure of language. Nor does it contradict Miller's idea that we recode material in manageable chunks. The structured sentences are readily "chunked" and, therefore, more quickly learned. On the other hand, it may be that structured material facilitates an orderly approach, and unstructured material does not.

"Some Conditions of the Influence of Syntactical Structure on Learning: Grammatical Transformation, Learning Instruction and 'Chunking'"

by William Epstein

There is evidence that syntactically structured material is easier to learn than unstructured material, and it is widely believed that the same kernel sentence becomes increasingly difficult to learn in its active, passive, and nominalized transformation.

The question may be raised as to whether the facilitating effect of syntax on learning depends on administration of intentional learning instructions. A further question may be raised as to whether syntax facilitates learning because it gives the S a system for grouping or "chunking" words.

In this experiment the Ss were presented with structured anomalous "sentences" (2 in active voice, 2 in passive voice, and 2 nominalizations) and 6 matched unstructured series of words. One group of Ss performed under the chunking condition--the sentences were marked (// //) at phrase structures, the series (scrambled versions of the sentences) were segmented in the same positions. Two groups were tested under chunking conditions.

One group was given intentional learning instructions. The other Ss were told to look at the material; they would be asked to pronounce the words. Both groups were alerted to the chunking. The Ss receiving unchunked material were also divided into those receiving intentional learning instructions and those told that pronunciation was the task.

The mean number of words recalled under the 24 experimental conditions point to the following conclusions: 1. The effect of structure on learning is general, not confined to active voice. 2. Syntactic structure facilitates learning only when intentional instructions were given. 3. Structured material facilitates learning better than chunked material. Under incidental learning procedures, chunking hindered learning. 4. Chunked material was easier to learn than unchunked when material was structured, more difficult when material was unstructured.

If syntactic structure facilitates learning because it is amenable to chunking, the gap between a S's recall of structured material and chunked unstructured material should be smaller than the gap between recall of simply structured and unstructured material. The results of this experiment run contrary to that proposition.

"Response Strength of Single Words as an Influence in Sentence Behavior"

by Joan L. Prentice

It seems reasonable that the verbal unit having the greatest response strength (RS) is uttered first, and the remaining units are ordered in such a way as to convey the message. If this is so, it should follow that it is easier to learn sentences where word order follows response strength, that is, where the word having the greatest response strength appears at the beginning.

To test this Ss were given a paired associate task where nouns were stimuli and sentences were responses. It was posited that if the noun-stimulus was a primary word associate of the first noun in the sentence, the sentence would be learned faster than if the noun-stimulus aroused RS (being a primary associate) for the last noun in the sentence, or if indeed the noun-stimulus did not arouse RS for either noun in the sentence. Given that man--woman and lion--tiger are highly associated pairs, and the active sentences (1) The tiger frightened the woman and (2) The woman shot the tiger and the passive constructions (3) The tiger was shot by the woman and (4) The woman was frightened by the tiger, it would appear that Ss would learn sentences 1 and 3 more readily if lion were the stimulus, and sentences 2 and 4 more readily if man were the stimulus.

Ss were assigned to 3 groups where (1) prime associates of the stimulus appeared in initial position, (2) prime associates of the stimulus appeared at the end position, and (3) where the stimulus-noun was not an associate of either noun.

The date consistently and reliably shows that when RS occurs at the beginning of the sentence the sentence is learned more quickly. Although the greater ease of learning passive constructions was not significantly greater than active constructions of group 2, the advantage of initial high RS seems to balance with the advantage of simpler syntax. Ss committed the error of switching the high RS noun to the beginning and, in so doing, switched from passive to active, but the reverse switch in syntax was rare. The implication that selecting initial units of an utterance is a function of the relative RS of the verbal units necessary to convey the message is supported by these findings.

"Recall of Sentences as a Function of Syntactic and Associative Habit"

by Sheldon Rosenberg

Two classes of language habits are likely to facilitate performance in verbal learning at the sentence level: syntactic grammatical habits and associative habit.

Four stimulus nouns were found in the Minnesota norms which elicited two adjectives and a verb with some frequency. Appropriate tags were added to create sentences. (Type 1. High Association-Grammatical: Shrill whistles blow loudly.) For the same nouns weak associative adjectives and verbs were found, and sentences were again constructed. (Type 2. Low Association-Grammatical: Orange whistles smile harshly.) Nouns in Type 1 sentences were replaced with semantically inappropriate nouns in the hope of creating "Moderate Association Grammatical" sentences. (Type 3: Shrill theories blow loudly.) Syntactic habit was manipulated by rearranging the order of all sentences in the same manner. (Type 4: H.A.-Ungrammatical: Loudly whistles shrill blow.) L.A.-Ungrammatical and M.A.-Ungrammatical sentences were constructed from Types 2 and 3.

Each S received one type sentence, 4 at a time, and was told to "learn the sequence of words on the page." Ss' scores were the written recall of whole sentences, words in correct position, and total number of words recalled over 4 trials.

Performance on grammatical types was significantly better at all association levels. Occurrence of syntactic errors on ungrammatical types is far greater than of grammatical types. Occurrence of syntactic errors was not affected by associative habit.

The study demonstrated independent operation of syntactic and associative habit in recall. It also suggests that what we call a meaningful sentence is one in which content words are selected from overlapping associative hierarchies. The Ss' superiority in remembering whole sentences of Type 1, plus the fact that in Types 2-6 there was a sharp drop-off in recall at the 3rd word (whereas all words in Type 1 were recalled with nearly equal frequency) prompt Rosenberg to believe that in short high-association-grammatical sentences the unit of information is the entire sentence.

"Grammatical Transformations and Sentence Comprehension in Childhood and Adulthood"

by Dan K. Slobin

The investigation was designed to extend the psycholinguistic test of the grammatical model (complexity of sentences being a function of the number of transformations removing them from their kernel by examining the possible effects of additional semantic variables--reversibility and non-reversibility of action--upon the comprehension of 4 sentence types (K, N, P, NP).

Ss were 5 groups whose average ages were 6, 8, 10, 12, and 20 years. Two types of pictures were used: those depicting reversible actions (cat chases dog) and those depicting irreversible actions (girl waters flowers.) Sentences describing pictures are classified by 5 criteria: Truth, Affirmation, Grammar, Reversibility, and Normality (Girl waters flowers, but *flowers water girl). Sixteen sentence types were possible, and each S received each type 3 times. E said the sentence and presented a picture. S responded right or wrong. Response time was measured.

Results: The theory that sentence difficulty is based on grammatical transformations is borne out, except that semantic problems of negativity seem to outweigh syntactic problems of passivity. There is a marked interaction between truth and affirmation. At all ages RT to nonreversible sentences is faster than reversible sentences. Possibly, Ss experience some difficulty in determining who the actor is in passive constructions. Indicating a tendency, perhaps, to ignore the syntax of grammar and rely on the syntax of semantics, i.e. flowers just don't water girls in the real world. Hence many sentences can be understood without utilizing grammatical syntax. This confusion is eliminated in non-reversible sentences. Semantic factors such as negativity and reversibility play an important role in the theoretical gap between competence and performance and alter behavior predictions made solely on the basis of syntactic psycholinguistic theory. Anomaly tended to confuse and retard RT rather than speed it.

"Learning of Prose Written in Four Grammatical Transformations"

by E. B. Coleman

There is evidence that some grammatical transformations are more easily understood than others. If this is so, describing readability in terms of transformations will probably be more fundamental than the readability formulae now in use (Flesch, for example).

Experiment I. Each of the ten nominalized transformations were detransformed to active-verb versions. For example: A detailed knowledge of the lower Mississippi Valley can be quite helpful becomes If you knew the lower Mississippi Valley in detail, it would be quite helpful. Ss were presented 5 nominalizations and 5 detransformed versions (not of the same sentence) on a memory drum. The measure of understandability was the number of trials before the S repeated the sentence perfectly.

Results: Six of the 10 detransformed versions were learned more quickly. Coleman reached these conclusions: a. short clauses are easier to learn than long clauses. b. transformations which fail to shorten clause length do not speed memorization. c. the experiment does not support the belief that words belonging to psychological categories (beauty) are easier to process than words derived from them (beautiful).

Experiment II. Ninety-six active voice sentences and their passive transformations were presented to Ss on a slide projector in sets of six, three active--three passive. Ss were told to write all they remembered. Score was a total of (a) all content words in any order, (b) three word sets in correct order, and (c) complete sentences in correct order.

Results: Ss performed significantly better with active constructions in all three categories. If passive were kernelized, the same words should be most frequently remembered from active and passive constructions. This is not so. Word order seems to account for most frequently remembered words (first word best remembered, last word a close second). The experiment did show that 56 passive sentences were reproduced as active, while only 33 actives were retained as passive.

Experiment III. Thirty-six adjectivalizations and their detransformed versions (example: The urgency of immediate demands is allowed to usurp attention.) were presented in pairs on a slide projector. Each pair was presented twice for 5 seconds with these instructions: "Write what you can remember" and after the second presentation, "Correct what you have written." Scores were a total of content words, doublets, triplets, and whole sentences.

Results: There was no statistical difference in success of Ss' recall. Length was a better predictor than different transformation.

Experiment IV. Four kinds of embedded sentences and their nonembedded transformations (example: The rat that the cat killed ate the malt becomes The cat killed the rat that ate the malt.) were presented typed on a page in ENNE order. Cloze tests were prepared so that every word was deleted from some S's test. Percent of subjects who got the word correct was found for each word. Ss read the sentences before they took Cloze tests over the same material.

Results: Ss performed significantly better on tests over nonembedded sentences taking both function and content words, but there was no significant difference over content words alone.

Discussion: The structures with which Ss were significantly more successful usually consisted of shorter clauses. There is more work needed in the hierarchy of complex transformations. The present system may not be psychologically sound.

"The Cognitive Basis for Linguistic Structures"

by Thomas G. Bever

Bever proposes that rather than investigate the development of grammatical structures as being inherent in the grammar of the adult, one should investigate the possibility that "language structure is itself partially determined by the learning and behavioral processes that are involved in acquiring and implementing that structure." (p. 280) Bever cited a series of experiments designed to determine the perceptual strategies of subjects listening to speech. Subjects listened to sentences such as "Because it rained yesterday the picnic will be cancelled." (p. 289) A click interrupted the speech signal and the subjects were to report where the click occurred in the sentence. A click which actually occurred in the words "yesterday" or "the" in the example sentence was most often reported as having occurred between the two words. The investigators argue that the experiment demonstrates "that the clause has relatively high psychological coherence, since it 'resists' interruption by the click." (p. 289) Procedures were worked out in the experiments to insure that neither pauses nor intonation could be thought to be responsible for the subjects' segmenting the speech signal between clauses.

The experiments suggest strategies for the perceptual organization of a string of words.

> Strategy A: Segment together any sequence X...Y, in which the members could be related by primary internal structural relations, "actor, action object...modifier." (p. 290)
>
> Strategy B: The first N...V...(N)...clause isolated by Strategy A) is the main clause unless the verb is marked subordinate (p. 294)
>
> Strategy C: Constituents are functionally related internally according to semantic constraints. (p. 296)
>
> Strategy D: Any Noun-Verb-Noun (NVN) sequence within a potential internal unit in the surface structure corresponds to "actor-action-object." (p. 298)

Bever cites evidence to support the validity of these strategies, and goes on to demonstrate that language behavior in the adult and child reflect broader principles of cognition and perception which govern human behavior.

Bibliography

Bever, T. G., "The Cognitive Basis for Linguistic Structures," in John R. Hayes, ed., Cognition and the Development of Language; John Wiley & Sons, Inc., New York, 1970.

Bloomfield, L., Language, Holt Rinehart and Winston, Inc., New York, 1933.

Chomsky, N., Syntactic Structures, Mouton, The Hague, 1957.

Chomsky, N., Aspects of the Theory of Syntax, M. I. T. Press, Cambridge, Massachusetts, 1965.

Coleman, E. B., "Learning of Prose Written in Four Grammatical Transformations," Journal of Applied Psychology, 1965, 40, 332-341.

Epstein, W., "The Influence of Syntactical Structure on Learning," American Journal of Psychology, 1961, 74, 81-85.

_____., "Some Conditions of the Influence of Syntactical Structure on Learning: Grammatical Transformation, Learning Instructions, and Chunking," Journal of Verbal Learning and Verbal Behavior, 1967, 6, 415-419.

Gough, P. B., "Grammatical Transformations and Speed of Understanding," Journal of Verbal Learning and Verbal Behavior, 1965, 4, 107-111.

Johnson, N. F., "On Relationship between Sentence Structure and the Latency in Generating the Sentence," Journal of Verbal Learning and Verbal Behavior, 1966, 5, 375-380.

Mehler, J., and Cary, P., "Role of Surface and Base Structure in the Perception of Sentences," Journal of Verbal Learning and Verbal Behavior, 1967, 6, 335-338.

Osgood, C. E., and Sebeok, T. A., eds., Psycholinguistics: A Survey of Theory and Research Problems, Indiana University, Bloomington, Indiana, 1954.

Prentice, Joan L., "Response Strength of Single Words as an Influence in Sentence Behavior," Journal of Verbal Learning and Verbal Behavior, 1966, 5, 429-433.

Rosenberg, S., "Recall of Sentences as a Function of Syntactic and Associative Habit," Journal of Verbal Learning and Verbal Behavior, 1966, 5, 392-396.

Saporta, S., Psycholinguistics: A Book of Readings, Holt, Rinehart and Winston, Inc., New York, 1961.

Slobin, O. I., "Grammatical Transformations and Sentence Comprehension in Childhood and Adulthood," Journal of Verbal Learning and Verbal Behavior, 1966, 5, 219-227.

"PERMISSION TO REPRODUCE THIS COPYRIGHTED MATERIAL HAS BEEN GRANTED BY
National Council of Teachers of English
TO ERIC AND ORGANIZATIONS OPERATING UNDER AGREEMENTS WITH THE NATIONAL INSTITUTE OF EDUCATION. FURTHER REPRODUCTION OUTSIDE THE ERIC SYSTEM REQUIRES PERMISSION OF THE COPYRIGHT OWNER."

Language Learning and the Teaching Process

Janet Ann Emig *

The British linguists Halliday, McIntosh, and Strevens divide the teaching of the native language into three major modes. These they called (1) the prescriptive, (2) the descriptive, and (3) the productive teaching of language.[67] This discussion will emanate from their distinction. I believe that most teachers engage in all modes when they teach the native language, although their exemplifying of each and their apportioning of time among the three modes vary stunningly. I also believe that this apportioning exemplifies in part the philosophy of language of a teacher, a department chairman, or indeed, of anyone who shapes the curriculum in a school or school system.

Prescriptive teaching of language is the mode many linguists would regard as the least interesting and significant. Prescriptive teaching involves teaching children to replace language patterns which are regarded as unacceptable with other patterns that are regarded as acceptable. As with the other two approaches, prescriptive teaching of language can deal with either or both oral and written modes of discourse. Dialect I will use throughout my discussion as one example of oral discourse to which any three of the approaches can be applied.

If a teacher proceeds prescriptively, he treats the student's original dialect as inadequate, inaccurate, illiterate, or just plain cussed and wrong-headed. He often makes statements of the following sort: "John, you must sound the *g* in *ing* at the end of words. Educated people always do. Don't say *singin'*; say sing*ing* if you want to sound and be educated. Dropping your *g's* is just sheer laziness and indifference." Or: "Educated people never say 'You is,' or 'They is, Millicent'; Say 'You are'; 'They are.'" It is, incidentally, this kind of teaching that leads to one of two reactions almost all of us have experienced at any cocktail party or for many square miles around any NCTE convention. Query; "You one of those English teachers?" Reaction 1: "I'd better watch what I say." Reaction 2: "Oh!" Then the lapse into total silence.

A certain kind of evaluation of student themes qualifies as an example of prescriptive teaching directed toward the child's written language. It involves positively profligate use of margins, backs of pages, and even whole extra sheets

From *Elementary English* 44:602-608, 709 (October 1967). Copyright © 1967 by the National Council of Teachers of English. Reprinted with the permission of the National Council of Teachers of English and Janet Ann Emig.

* also found in Language Arts in the Elementary School: Readings, Hal D. Funk and DeWayne Triplett (Ed.) Philadelphia: J. B. Lippincott, 1972. Chapter 30.

of paper where the prescriptive teacher makes such mute imprecations as *awk! ivc!* and *dang part!*

Both of these examples—indeed, all examples of prescriptive teaching—proceed from at least two hidden assumptions that are, to say it as gently as possible, suspect. The first is that there are absolute standards, which are known and unanimously shared by educated adults, to which a student's oral and written language should attain. The standards in the case of child's oral language might be—if the student is lucky—the style of Huntley-Brinkley or Walter Cronkite, depending on the teacher's network loyalty; or if he is unlucky—that of Gladstone or William Pitt, or even Demosthenes—in translation, of course.

The standards in the case of the child's written language might be the immortal prose of the Harbrace Handbook or, if the teacher is sufficiently anachronistic, the essays of Gibbon or Sir Thomas Browne. My reason for reaching into the past for models of excellence is that prescriptive teachers do, when they are not proceeding from negative instances a la Lindley Murray and other sterling school grammarians. Often there is not even a specific model or era in mind so that the teachers, when pressed, just lyricize over some Golden Age of perfect language—with time and place carefully unspecified.

A second assumption in prescriptive teaching is that prescriptive teacher intervention can effect significant changes in oral and written language patterns of late adolescents, of early adolescents, or even of elementary children. One wonders if teachers who proceed wholly prescriptively have read any recent research on the child's initial acquistion of language. Take these three quotations:

The first is from a summary of research on language development by the psycholinguists Susan Ervin and Wick Miller:

> What material is available suggests that by the age of four most children have learned the fundamental structural features of their language and many of the details.[68]

The second is by the psychologist John B. Carroll:

> By the age of about six, the average child has mastered nearly all its common grammatical forms and constructions—at least those used by adults and older children in his environment. After the age of six there is relatively little in the grammar or syntax of the language that the average child needs to learn, except to achieve a school-imposed standard of speech or writing to which he may not be accustomed in his home environment. Vocabulary learning, however, continues until late in adult life.[69]

And here is the linguist Martin Joos in his essay "Language and the School Child":

> It [learning the grammatical system of the native language] is complete—and the books are closed on it!—at about eight years of age. It is not normal to learn any more grammar beyond that age.[70]

Let's combine these statements by linguists for a moment with the thesis developed with convincing data by the psychologist Benjamin Bloom in his study *Stability and Change in Human Characteristics*.[71] Bloom's thesis is that certain human characteristics are increasingly impervious to change with increasing

chronological age. Language is strongly implied as a cluster of characteristics especially impervious to change. Bloom means through any form of intervention, of which I believe prescriptive teaching to be a powerful instance.

There are assumptions not only about the nature of language but about the nature of learning and teaching in prescriptive teaching of language [indeed, in all three modes]. For a moment let me make these explicit for prescriptive teaching.

The psychologist Jacob Getzels has devised a very useful set of distinctions about teaching and learning which might be called "Knowledge, Knowledge, Who's Got the Knowledge?" There are four possible situations: The first—and this order is arbitrary—is that the teacher knows something which the student does not. A second is that both teacher and student know something. A third is that the student knows something the teacher does not. A fourth, of course, is that neither knows.

Each of these situations I'd like to suggest requires a different role or set of roles for both teacher and learner. Prescriptive teaching is, I think, clearly and wholly an example of a situation where the teacher knows something the student doesn't (since there is often no match in his own experience). One way to put the relation between teacher and student is the classic metaphor of student as pitcher, to be filled with new oral or written dialect. What would be the role of teacher here? Teacher as water carrier or—if the teaching were for some reason reported on the society page, the article would begin, "Miss Fidditch poured."

If one preferred a more active metaphor for prescriptive teaching, the teacher of course could become sculptor with the student here a raw lump of clay to be pummeled finally into a member of the English-Speaking Union. Perhaps the most accurate metaphor from what I've said thus far about prescriptive teaching might be teacher as Sisyphus with the student as stone, rolling relentlessly down the hill again.

The wholly prescriptive teacher might at this moment be rue-ing "Othello's occupation's gone." He might also be asking, "Are there no components of my student's language still pervious to change at the high school level?" The answer seems to be *perhaps* usage or other specific components in student dialect, if he wants to try.

Several important considerations to note here. First, only tough, systematic, long-term effort will make any change at all. And with constant, carefully programmed drilling. Since what is required here is really teaching a foreign dialect, the teacher who wants to take on the task—and let's leave aside the ethics involved in such a decision—probably should learn the latest techniques in the teaching of a second language, especially the outstanding work in motivation accomplished by the second language teacher.—May I just pause to note the metaphor inherent in this form of prescriptive teaching: which is of course teacher as top sergeant, student as buck private.

The second consideration in deciding what to teach prescriptively is efficiency, or the time-and-motion factor. *If*—and again please note the conditional state of my utterance—the teacher plans to try to change the near-impervious, it is important not to proceed in a scattershot method and deal with all matters of usage or phonology discretely or randomly. There are now excellent studies available of the dialects indigenous to many, if not most, parts of the fifty states. As just three examples, Lee Pederson's work on the dialects of Chicago, William Labov's on New York and Richard Larson's on Hawaii.[73] If I may be prescriptive, read the appropriate studies for your section of the country; select a brace of phonological and syntactic deviances; and focus on these, excluding all others. In the Chicago dialect, for example, drill on agreement with second

person singular and plural, and third person plural with verbs *to be*, because therein lies one of the most persistent deviances from standard English.

Since the amount of time I spend on a mode may be regarded as a value judgment on how important I think it is, let me move quickly to the second—the descriptive teaching of English.

This is the mode in which descriptions are delineated of how language actually works; its general nature; and, if this can be separated, its specifically human characteristics. Because I think the subject matters and the approaches to them in descriptive teaching are more broad and varied, teachers and students assume a far greater range of roles. I will try to suggest many of these forms of variety in descriptive teaching.

Let's start here with the uniquely human nature of language, as contrasted with animal communication. A description of both can form a fascinating subject matter from grade one through graduate school, with the focus and the sophistication of treatment determining the grade level for presentation. One can imagine a likely discussion in the very early grades of "Can Flipper Talk?" or a consideration in late secondary school or college of certain physiologic correlates with and psychological propensities to language as noted, say, by the physiologist-psychologist Eric Lenneberg.[73] Lenneberg points out, for example, that no animal masters the concepts and principles of language well enough to apply or engage in phonemic analysis, to produce an infinitely large and original set of utterances from his basic stock of sounds, or to impart what Lenneberg calls the "total semantic domain" of word.

A second subject-matter in emphasizing the uniquely human nature of language is a description of how a child initially acquires language. Here, as with specific regional or group dialects, the teacher needs to add reading of current research to observations, and remembrance of how his own children, or babies he knew, acquired language. Some authors here, if you are interested, are Bellugi and Brown; Carroll; Ervin and Miller; and Weir.[74]

Students can learn the basic data about how children learn language by the same route adults follow—that is, by observation systematized by reading, with both supplemented by teacher aid in establishing categories and generalizations. Here teacher and student become field linguists together using as subjects siblings and neighbor children as they answer such questions as "What sounds does a baby make first? When? Why?" "What kinds of responses do babies and small children make when you say a word to them? Why?" "How can you decide when a baby says his first word?" "When do children talk in sentences? What do you mean by sentences?" "What parts of speech do small children learn first? Last? Why?" "Which sex speaks earlier? Why? Later? Why?"

The next subject matter to approach descriptively is grammar. And of course the question becomes "What Grammar?" To answer this question, one needs to establish the criteria for what constitutes a satisfactory description. For me these criteria are the following: A satisfactory descriptive theory of grammar is (1) accurate, (2) comprehensive, (3) elegant, and (4) self-correcting. This means the mode of grammar I teach is the latest version of Noam Chomsky's evolving transformational-generative grammar as presented in his study, "Aspects of the Theory of Syntax." My choice I do not regard, I must say, as an edict from the dais: it is simply my personal preference for the reason I have cited.

One of the crucial concepts—I might say deep structures—in what I will call *t-g* grammar is that every native speaker, from the time he acquires syntax, possesses a profound intuitive knowledge of his own language. A major question in teaching the native language today is how, when, and why should this

knowledge be made explicit and conscious? I cannot within the scope of this paper do more than suggest a few dimensions of this decision.

If Joos is right in saying that a child completes learning the grammar of his language by the time he is age eight—and I think it is clear from the context he means the unconscious mastery—is the child then immediately ready to have this knowledge made conscious and explicit? Should there be a hiatus of a year or two to allow this knowledge to deepen? Should we wait until the age Piaget and Whitehead agree is the age of the first coping with formal propositions —that is, between twelve and fourteen? Is a conscious knowledge of grammar necessary or useful at any age? If so, how? Should the teaching be regarded non-pragmatically? That is, grammar is one of the most profound whorls of identifying our humanity, and as a humanistic endeavor, it is self-justifying?

Why teach a student two types of subject matter? To instigate awe in what he has already achieved as a learner. One differentiation between prescriptive-proscriptive, and descriptive and productive teaching of language is the stress. Prescriptive teaching focuses on the miniscule failures—often matters of maturation or socio-economic status—in a student's mastery of language; descriptive and productive, on his fantastic actual and potential attainments. Especially to children who regard themselves as academic failures, there should be enormous assurance and support in the fact that by the time they enter school they have already learned enough to assure their human membership for their lifetime.

What roles do teachers and students assume in this particular segment of the descriptive mode? To return to the Getzels distinction both teachers and students at once know and do not know. The teacher has conscious, explicit, and systematic knowledge of both animal communication and the initial acquisition of language; the child unconscious and implicit. Yet they are in other ways fellow discoverers together. The teacher has another role here—one I mentioned earlier. He is instigator of awe. What is the concomitant role for the learner? He is apprentice in appreciation, of his own accomplishments.

With this descriptive mode of teaching grammar, as with teaching the initial acquisition of language, the teacher may have the role of explicator and organizer. The student then is provider of data: a more classic metaphor here, if you prefer, for teacher in this inductive role is teacher as Socrates; students as his students.

Other phases of language teaching that can be approached descriptively are the teaching of lexicography, semantics, the history of language, and dialectology. Our own teaching imaginations can supply ways of approaching these so as to intrigue the interest and to insure the participation of the students.

All of these segments deal with *oral* phases of language teaching. What opportunities are there for teaching the written language descriptively? The teacher can deal with actual calligraphy, using perhaps such beautiful new sources as *The Art of Writing*, the UNESCO publication available at the last NCTE Convention. The class can also examine the process of composing. How can this be done given the fragmentary nature of our formal knowledge about how we compose? There are two rich resources: introspection in our own experience; and analysis of other writers' accounts, both student and professional. The two sources can be joined if students are asked to keep a writer's diary in which they describe how they feel about writing they are doing. Did they like the theme assigned or not? Why? If there was no topic assigned, what kind of search did they make for one? How long were they engaged in pre-writing? In what context or environment? If they revised, how long after a draft? What did their revisions consist of?

Professional authors can be approached through the number of analyses by the authors themselves and others of styles of working, of attitudes positive and negative to the act of writing. Anthologies of interviews such as *Writers at Work*, Volumes I and II,[75] and *Counterpoint*, edited by Roy Newquist,[76] present the statements about composing by nearly a hundred professional writers. An article which examines a number of such writers' statements is one I wrote in February, 1964, in the *CCC Journal*, "The Uses of the Unconscious in Composing."

There are also for student examination writers' drafts and revisions—in far greater number than we might suppose. For juniors and seniors, there is a new anthology *Word for Word: A Study of Authors' Alterations, with Exercises*, by Wallace Hildick with segments of revisions from *Middlemarch*, *Mrs. Dalloway*, and six other selections, along with excellent questions about why certain changes were made.[77]

There are many other sources as well. Two examples are M. R. Ridley's study of the manuscripts connected with the major odes by Keats and Thomas Parkinson's recent study of Yeats, *W. B. Yeats: Later Poetry*.[78]

Some of you might say with this or other parts of what I've described thus far: "I'd call that productive, not descriptive, teaching." Perhaps it is. The categories are not tidy, nor have I suggested—I hope—that there is some kind of mystic matching between certain subject-matters and certain teaching modes.

The productive mode of teaching Halliday, McIntosh, and Strevens describe as helping the student extend the use of his native language in the most effective way. Teachers of course will interpret and implement "in the most effective way" very individualistically. I would like to suggest one or two ways for both oral and written features of discourse. Many British linguists employ a term *register* which some of you might find as useful as I do. It refers to specific realms of language usage, such as the realm of professional jargon or a style directed to a given sort of audience. The emphasis then, in a broad sense, is rhetorical.

The major emphasis in productive teaching of English then might be said to be the extension of student registers, both in oral and written discourse. How might this work with each? Despite protestations and sillinesses I have heard to the contrary, children from a very early age govern features of their oral discourse according to audience. This adjustment, which is sometimes called social rather than linguistic awareness, is analogous, I think, to grammatical skill in that it is unconscious and unsystematized, but *there*. Again, as with grammar, the role of the teacher is as explicator; the role of the student is as purveyor or supplier of raw data. Students at all levels can be trained to listen to themselves and others speaking to many kinds of audience, to observe and systematize differences, and eventually to practice specific roles.

They probably need to experience a range of styles. In school too often we teach but few varieties of jargon. One constant example is lexis of whatever critical theory of literature we happen to espouse. We are elaborate in our treatment of the jargons of academe which only some students will ever have to handle, while slighting or forgetting entirely the jargons of the marketplace in which all students will be dealing for significant parts of their future life. One thinks here of the language of advertising, of propaganda—indeed of all forms of slanted writing and talking. A useful study here would be the rhetorics of political movements, such as Civil Rights—the style of a Martin Luther King against the style of a Stokely Carmichael, and both against a Malcolm X. Or the prose of actual campaigners, such as the recent pottage of rhetoric.

Both written and oral targets of productive teaching—indeed of any of the three modes—can I think be approached playfully rather than grimly, with the students engaging in all kinds of autoletics of discourse, trying on different styles and roles, without fear of mature responsibilities or reprisals.

With written discourse this approach can take many guises. Students can imitate a range of stylistic models of their own choosing. They can choose to be for a given assignment Virginia Woolf or Ian Fleming. Some might ask, "How can imitation of models be a form of productive teaching?" Fortunately, we are all such inevitable individualists that perfect and literal imitation is impossible—some cadence or flavor of our own gets into whatever we write, as all of us who have taught modeled writing are well aware.

Or we can watch the transmogrification of a story or other content through the employment of many styles or voices. A new almost-classic source is Raymond Queneau's *Exercises de Style*;[79] another just published is a book by Walker Gibson wonderfully entitled *Tough, Sweet and Stuffy*.[80]

In all these forms of productive teaching we have a double role. We are at once fellow performer and director—Gielguds and Oliviers of our classrooms. Fellow performers because we produce too. We write not only because of the models we hope to set but because of inner compulsions for order and beauty that we at times talk about with our students; directors, because we try to create a context that is safe and free enough that students will find courage to extend their public and private expressions of heart and mind, thinking and feeling.

What kind of teacher does the most powerful and successful teaching of language require?

1) He has formidable substantive command of his discipline of language. If he teaches prescriptively, he has to know what standards he holds and why, as well as the formidable barriers that threaten even a most modest success. If he proceeds descriptively, he must have accurate descriptions of many phenomena involving the general nature of language and of human acquisition of it. This means, ideally, for the purposes of given classroom segments—or to use the chic word, modules—he is a historical linguist; for others, a dialectician; for others, a grammarian. If he proceeds productively, he needs a strong knowledge of processes. If he does not keep this knowledge in his head, he needs to keep it on his book shelves or in a nearby library to which he has ready access.

2) He has knowledge as well about the nature of the learner, of the teacher, as well as a repertoire of ways in which they interact. He is aware of implications about learning theory of a given role he may assume and/or ask a student to assume. As important, he has the cluster of strategies to assure he and his students will be playing the role appropriate to the nature of the subject he is teaching, as well as those which enable him to stay in these roles or shift to another as their needs and the requests demand from the subject matter required.

3) Both of these imply a third, a human category. The teacher must possess certain personal attributes that make possible his movement along modes. Clearly, the key attribute here is flexibility. Another—a closing way—to put the matter, he needs an incredibly wide range of registers which he can play like the virtuoso performer the good teacher ideally is.

JANET EMIG / *On Teaching Composition: Some Hypotheses as Definitions* *

"We teach composition." Whatever can we mean? Our rhetorics and practices down the centuries form a fantastic pop-op mobile—appalling, if we are free enough to be judgmental.

Around the mobile whirls:

> A bar sinister of red pencils crosses a shield of paperback covers;
> Exhortations rise up on a collage of grammar workbook sheets,
> topical and contradictory as Chinese wall posters;
> "Write more," "Write less"; "Revise," "Throw away";
> At the base turns a combination retroactive multi-rocket tape recorder-
> opaque projector-computer
> half-engorging a ventilated, crenellated program card;
> At the top, like a Marisol, smiles out a photo of an actual animate—
> A lay reader
> (With that designation, shouldn't she be off gilding manuscripts?
> Or Deweyizing some order's library?)

What have we been thinking? What are we doing?

"Not much," some voices, quiet but acerb tell us—Sledd, Roberts. As Hemingway once wrote Marlene Dietrich, about another matter, "Movement is not action."

What could we possibly mean when we say we teach composition? Surely it is not premature to attempt some kind of systematic response.

From *Research in the Teaching of English*, I (Fall, '1967), 127–35. Reprinted by permission of the National Council of Teachers of English and Janet Emig.

*

also found in Teaching High School Composition, Gary Tate and Edward P. J. Corbett (Ed.) New York: Oxford University Press, 1970 pp. 18-25.

PERMISSION TO REPRODUCE THIS COPYRIGHTED MATERIAL HAS BEEN GRANTED BY

National Council of Teachers of English

TO ERIC AND ORGANIZATIONS OPERATING UNDER AGREEMENTS WITH THE NATIONAL INSTITUTE OF EDUCATION. FURTHER REPRODUCTION OUTSIDE THE ERIC SYSTEM REQUIRES PERMISSION OF THE COPYRIGHT OWNER

Teaching as Intervention

An essential prelude is to define what is meant, generically, by teaching. Teaching is the intervention, usually by an older person, into a process, usually of a younger person, to improve that process or the product of that process. Teaching can also be mutual intervention, an exchange of insights and competencies between older and younger (rare), or the exclusive unilateral intervention of a younger person into the process of an older person (unheard of).

Sermonettes will occur intermittently throughout this text. Sermonette I: For far too long, for far too many of us, the teaching of composition has been solely product-centered. We have been concerned exclusively with the piece of writing, more particularly the simonized draft submitted for the devastation and the grade. The sciences have long known and taught that getting there, like riding a Greyhound, is at least half the fun. Science and math instructors are quite as interested in the routes students take to a solution as in their identifications of the solutions themselves. Moreover, they know their significant teaching occurs before or during the time the student works in the laboratory, and they regard as very limited evidence of his intellectual evolution the slight, or full, reports the student hands to a lab assistant at the end of the session.

If teaching is intervention, the primal question in teaching composition is, of course, "In what kinds of intervention should we engage?" In teaching composition, as in most other forms of teaching, there are really only two significant modes of intervention: the proffering of freedoms and the establishing of constraints. The teaching of composition consists of determining and enacting strategies for intervention in one or both modes in whatever order best serves the writing process of the individual student and the piece he produces. Teaching can be the spontaneous, unpremeditated response to the moment, the student, or the piece. And it can consist of deciding *not* to intervene, as in dealing with the mature student who has already internalized and now enacts his own appropriate sets of freedoms and constraints. If intervention occurs, however, the double question becomes the highly complex and immensely fragile one of how and when.

Sermonette II: For far too many of us, the definition of teaching composition, like our definition of teaching in general, is solely the specifying of constraints. By the definition given here, this means that we are fulfilling only half, or less, of our function; indeed, that our view of teaching is dangerously truncated, irresponsible, and anti-humanistic.

It is probably helpful to characterize the kinds of interventions, both freedoms and constraints, which we as teachers of composition can extend. The freedoms are all, basically, varieties of cognitive and affective support: (1) the provision of stimuli; (2) the extension of options, including the presentation of skills needed by a student for a given piece; and (3) the acceptance of divergent writing behavior. Species of the third are (a) allowing the student to choose his own subject and style of approach; (b) permitting him, tacitly or explicitly, to break off in process and not complete a given piece of writing; (c) withholding any form of evaluation, perhaps including praise; and (d) giving sanction for the student in some instances not to write at all.

To further define and taxonomize, stimuli are verbal and nonverbal ploys for setting the writing process into motion or for keeping it going. Verbal stimuli can be (a) the right kinds of assignments, oral or written; (b) teacher and student dialogue about the process of writing, professional and peer, and about specific products, most notably, of course, great pieces of literature; and (c) models offered by the writings of professionals and peers. Some might classify modeled writing as a constraint in that syntax is fixed; but many students find models stimuli for getting under way, and they are free to fill sentence patterns with any lexicon they choose. Actually, all of these examples could be regarded as species of both modes. The most skillful intervention may well combine the proffering of a freedom with the issuance of a constraint.

Nonverbal stimuli can be (a) incitements by other modes—music, painting, sculpture, mime, mass communication; (b) rituals; and, especially, (c) confrontations with the natural world. By rituals are meant those habits or compulsions that determine how a piece of writing is begun or continued—choosing certain kinds of writing instruments or paper and pursuing such required indulgences as eating, drinking, or smoking.

The third freedom is the acceptance of divergent writing behavior, such as permitting a student to select his own subject or not to complete a piece of writing. Sermonette III: People outside schools usually have the option in some segment of their lives not to complete what they have begun. The lives of the highly creative abound in the unfinished—manuscripts, quartets, canvases, equations, theories. Why the ruthless puritanism of the schools? Why must the student finish everything he begins, especially when at some early moment both he and the teacher identify a piece as a loser? And when our own writing lives are filled with shards?

The withholding of evaluation is also an examplar of freedom. The student is permitted at times to write without teacher as unsolicited evaluator, or even unsolicited reader.

Expectedly, teacher constraints are counterforms of these freedoms: (1)

the rationing or removal of stimuli, (2) the establishing of parameters, such as helping the student to identify the audience to whom his piece will be directed and to heed conventions in whatever form he has selected, and (3) the interpretation of teacher support as certain kinds of insistences, such as the insistence at carefully selected times upon closure, that work be completed or completed and evaluated. The teacher's goal in this mode may ultimately be to help students appreciate the wisdom of Duke Ellington. When asked why he always composed for one orchestra whose weaknesses he knew as well as its strengths: he replied, "Limitations are a wonderful thing. Everyone should have them."

Writing as Process

What is the nature of the writing process into which we as teachers intervene? In literary, rhetorical and, textbook canon there is a strong tradition that all writers engage in a monolithic process, with that process made up of three discrete components—planning, writing, and revising. Although these canons seldom supply tight or full descriptions for these components, teachers and textbook writers usually agree on the following operational definitions:

> *Planning* is the sum of those activities, mental and written, the writer engages in prior to producing a first draft.
> *Writing* is his effort to formulate—usually observing the grammatical requirements, semantic conventions, and graphic amenities of a language—an effective expressive or expressive-communicative sequence of words.
> *Revising* is that activity, or series of activities, by which the writer adjusts, at a time usually separated from the writing of a draft, part or all of that draft to more closely approximate certain substantive and stylistic aims.

The writing process is treated as a fixed and full ordering of these three components occurring in a lockstep, non-recursive, left-to-right sequence. In other words, one always plans, then writes, then revises with no backsliding or returning to a previous "stage." The straight line is the metaphor implied or stated throughout these descriptions as an apt metaphor for the writing process, both *in parte* and *in toto*. One starts at the beginning of the process and moves without confusion or diversion to the end, like the Israelis marching to the Suez.

I would like to suggest that this description of the writing process is a series of hypotheses calling for, if seldom receiving, systematic scrutiny, especially since it has been belied by many kinds of internal and external

data—introspection; examination of our own drafts and those of others, both peer and professional; and our experience as teachers of composition.

One could equally, or more powerfully, hypothesize that the process of writing is not monolithic, or tri-partite, or non-recursive. That is, instead of a single process of writing there may be processes of writing, at least a process that can be changed—shortened, lengthened, transmogrified—by a number of variables. Instead of a process or processes inexorably made up of three "stages," there may be more or fewer components. Writing may be recursive, a loop rather than a linear affair—one can write, then plan; or one can revise, then write.

For the rest of this piece I will assume the second multiple hypothesis is valid. Five variables affect the length and nature of processes of writing. Four pertain to the student; one, to the intervener, the teacher. To this last I will devote my culminating discussion. The four that pertain to the student are (1) the sophistication of his skills, (2) his temperament, (3) his ego-strength, and (4) the nature of the mode in which he writes.

(1) The sophistication of a student writer's skills may affect the nature and length of the writing process. In some of my own inquiries, for example, I have found that very able eleventh and twelfth grade writers often do not make any written conspectus for pieces of discursive prose under 500 words. Yet if one questions these students about the plan they followed, they orally give highly elaborated outlines, complete with sub-subtopics and other accoutrements of that art form. And when forced by a teacher to produce a written outline, they invariably oblige by providing a construct *a posteriori*.

(2) Temperament also affects the process of writing. There are student writers, like mature writers, for whom revision is anathema. This does not mean that they are unwilling or unable to reconsider a writing problem. Rather, they prefer a total rewriting to a partial revision.

(3) The ego-strength of the writer is a highly significant variable in the writing process, and one almost wholly ignored. Its presence or absence affects many phases of the process, and particularly the evaluation that follows the process. If teacher evaluation is negative, for example, does the student become daunted and refuse to write, or does criticism spur him to persist?

It is sometimes difficult to tell by behavior alone whether its sources are the same, since behaviors may have different origins. For example, the writer with faint ego-strength and the writer with strong temperament may both refuse to revise. There are, however, quite different motivations for their refusal: for writers with certain temperaments, the task is too boring; for writers with faint ego-strength the task is too threatening or painful.

But both motivations affect the process of writing the same way: they eliminate revision, the third "stage."

(4) Mode has a marked effect upon the nature of the writing process. For the teaching of composition two undeniably significant dimensions of mode are the impulse behind the writing and, intertwined, the audience for whom a piece is intended. The impulse can be sheerly expressive, or it can also be commmunicative.' I will assume that most students write in both the expressive and communicative modes in schools or with school sanction. Sermonette IV: This assumption is, of course, false. Far too many American teachers of composition (to contrast here with British) give sanction only to communicative, to all that we mean by expository, writing. This focus, which probably emanates from a narrow definition of rhetoric in New England schools, academies, colleges, and universities in the nineteenth century, can be regarded as an unhappy manifestation of American pragmatism. This exclusiveness can be formulated as follows, "The imagination is no damn good unless it propels events in the 'real' world, such as the hanging of witches, or the dropping of napalm." There are two major reasons for the neglect of expressive (imaginative) writing: we have not developed criteria for evaluating writing in this mode, which is really to say we do not read enough, especially the absolutely contemporary writers, to give appropriate models to help us cross the generation gap; and we are afraid of any personal statement, especially by the young.

If the impulse is expressive, the audience initially and perhaps ultimately is the writer himself. The writer has committed a private act. If the impulse is communicative as well as expressive—by very definition a public act—the audience becomes one other or a group of others. The continuum here is probably from an audience of one known, a teacher or peer, through a group of increasing size of knowns, to an audience of unknowns, both in locus and in characteristics. At this last level one may again write for himself through the inability of imagination to identify those others; but it is now a self assiduously divided, with discerning reader and critic separated from initiator and writer.

Forms in which expressive writing seek shape are the brief outcry of thought or feeling; the sustained self-examination such as the diary, the journal, and the verse and prose autobiography; and certain kinds of letters. Expressive writings can of course achieve art. The brief outcry can become the quatrains of Dickinson, the terrible sonnets of Hopkins, the elegies of Rilke, or the dream songs of Berryman. Sustained self-examinations can become the diaries of St. John of The Cross or Gide or Harold Nicolson; or the journals of Mansfield, Fitzgerald, and Hammarskjöld. They can become the long verse autobiographies—"The Prelude" of Wordsworth, and "Life Studies" of Lowell; or the prose autobiography—the *Confessions* of

Augustine and Rousseau, *Memoirs of a Dutiful Daughter* by de Beauvoir, *Advertisements for Myself* by Mailer. They can become, finally, the letters one writes to oneself disguised as others, for example, John Keats to his brother Tom, Dilke or Shelley.

Forms in which communicative writing seek shape are the familiar ones set forth in rhetoric and composition casebooks and other texts: the straightforward one-to-one message, the elaborated exposition, the baroque argument, the polished critical statement. For examples of these, see any good rhetoric text, such as Connolly's *A Rhetoric Casebook*.

How do these dimensions of mode affect the writing process? Both early and late, teacher intervention differs according to whether the impulse behind the piece is expressive or communicative. (No matter the mode, the center of the process—the first sustained writing out—remains, I think, inviolate to any intervention.) Basically, with expressive writing the focus is upon nonintervention or upon intervention enacted chiefly as the proffering of freedoms; with communicative, upon helping students to acknowledge growing or changing sets of constraints. With pieces of expressive writing, for example, planning may be informal or nonexistent. In contrast, with certain kinds of communicative writing, planning under teacher guidance may prove both formal and elaborate, as in the production of a brief for a written debate.

In a thoughtful article, Charles J. Calitri suggests that the teacher evaluation *following* the writing process also differs according to the mode in which the student writes.[1] To use his metaphor, the teacher sets a different "contract" with the student depending upon that mode. Generally, with the expressive mode (Calitri's term is *autistic*, which I find too clinical), the teacher does not evaluate the writing; with communicative, he sets different contracts depending upon whether the student is attempting to convey a one-to-one message, write a simple piece of exposition, or produce a polished critical essay. Evaluation grows more rigorous as the mode becomes more complex.

Application in Teaching

How can we determine what kinds of freedom to proffer or constraints to establish? In part, we respond to the variables elaborated above. If we are to heed these, we clearly need a profound preknowledge of every student writing under our care. We can come into this knowledge by a double route: we must ask and we must observe. Early in our experiences with

[1] C. J. Calitri, "A Structure for Teaching the Language Arts," *Harvard Educational Review*, 1965, 35, 481–91.

them, we should ask students to keep writing diaries in which they recount how they set about and persist in writing. To determine dimensions to include, classes can read together and discuss professional writers' accounts of their styles and processes of writing. Anthologies we can use include the two volumes of the *Paris Review Interviews: Writers at Work* (1958 and 1963); *Counterpoint* (1964), edited by Roy Newquist; and the senior in the series, *Modern Writers at Work* (1930), edited by Josephine Piercy. Dimensions students will probably elect to discuss are time and place of writing, rituals associated with beginning and persisting, instruments of writing employed, attitudes toward formal planning, point of view toward revising versus revision, and responses to different kinds of teacher evaluation.

We need also to observe, which means that early in the semester or quarter students should write under our direct surveillance. We need to query the students about what they are doing as well as to observe, allowing, of course, for the artificiality and self-consciousness such a situation will probably evoke.

Commiseration I (in lieu of Sermonette V): Yes, I hear the murmurs and the mutters; and yes, I agree. Such a definition of teaching composition calls for a ferocious amount of work. I would suggest another less complex and taxing way, if I knew one that was honest and valid.

Such a definition of teaching composition calls for more than work. It calls for a certain kind of teacher. Indeed, the key variable that determines the direction and success of that complexity the teaching of composition is, ultimately, the teacher. How and when we intervene in the writing process of our students depends at last upon our knowledge of the writing process and of our students and upon our tact, taste, and sensibility. Most frightening and challenging of all, to establish constraints may well mean that we ourselves are disciplined and controlled persons as well as writers; to proffer freedoms may well require that we ourselves are free.

Children's Language and Experience: A Place to Begin by Kenneth S. Goodman Coordinating Reading Instruction, 1971. Chapter 4. Pages 50-56 removed due to copyright restrictions.

Reading: A Psycholinguistic Guessing Game[1]

KENNETH S. GOODMAN [2]
Wayne State University

AS SCIENTIFIC understanding develops in any field of study, preexisting, naive, common sense notions must give way. Such outmoded beliefs clutter the literature dealing with the process of reading. They interfere with the application of modern scientific concepts of language and thought to research in reading. They confuse the attempts at application of such concepts to solution of problems involved in the teaching and learning of reading. The very fact that such naive beliefs are based on common sense explains their persistent and recurrent nature. To the casual and unsophisticated observer they appear to explain, even predict, a set of phenomena in reading. This paper will deal with one such key misconception and offer a more viable scientific alternative.

Simply stated, the common sense notion I seek here to refute is this:

"Reading is a precise process. It involves exact, detailed, sequential perception and identification of letters, words, spelling patterns and large language units."

In phonic centered approaches to reading, the preoccupation is with precise letter identification. In word centered approaches, the focus is on word identifications. Known words are sight words, precisely named in any setting.

This is not to say that those who have worked diligently in the field of reading are not aware that reading is more than precise, sequential identification. But, the common sense notion, though not adequate, continues to permeate thinking about reading.

Spache (*8*) presents a word version of this common sense view: "Thus, in its simplest form, reading may be considered a series of word perceptions."

---

[1] Paper read at the American Educational Research Association, New York, February 1967, and published in the *Journal of the Reading Specialist*, May 1967. Reprinted with permission of the author and publisher.

[2] also found in Theoretical Models and Processes of Reading, Harry Singer and Robert B. Ruddell (Ed.) Newark, Delaware: International Reading Association, 1970. pp. 259-272.

PERMISSION TO REPRODUCE THIS COPYRIGHTED MATERIAL HAS BEEN GRANTED BY
International Reading Association
TO ERIC AND ORGANIZATIONS OPERATING UNDER AGREEMENTS WITH THE NATIONAL INSTITUTE OF EDUCATION. FURTHER REPRODUCTION OUTSIDE THE ERIC SYSTEM REQUIRES PERMISSION OF THE COPYRIGHT OWNER.

The teacher's manual of the Lippincott *Basic Reading* (*6*) incorporates a letter by letter variant in the justification of its reading approach: "In short, following this program the child learns from the beginning to see words exactly as the most skillful readers see them . . . as whole images of complete words with all their letters."

In place of this misconception, I offer this: Reading is a selective process. It involves partial use of available minimal language cues selected from perceptual input on the basis of the reader's expectation. As this partial information is processed, tentative decisions are made to be confirmed, rejected, or refined as reading progresses.

More simply stated, reading is a psycholinguistic guessing game. It involves an interaction between thought and language. Efficient reading does not result from precise perception and identification of all elements, but from skill in selecting the fewest, most productive cues necessary to produce guesses which are right the first time. The ability to anticipate that which has not been seen, of course, is vital in reading, just as the ability to anticipate what has not yet been heard is vital in listening.

Consider this actual sample of a relatively proficient child reading orally. The reader is a fourth grade child reading the opening paragraphs of a story from a sixth grade basal reader (*5*).

"If it bothers you to think of it as baby sitting," my father said, "then don't think of it as baby sitting. Think of it as homework. Part of your education. You just happen to do your studying in the room where the baby brother is sleeping, that's all." He helped my mother with her coat, and then they were gone.

hoped © a
So education it was! I ~~opened the~~ dictionary and picked out a

s PH He
word that ~~sounded~~ good. "Phil/oso/phi/cal" ~~I~~ yelled. Might

what it means 1. Phizo 2. Phiso/soophical
as well study ~~word meanings first~~. "~~Philosophical~~: showing calmness

his 1. fort 2. future 3. futshion
and courage in ~~the~~ face of ill fortune." I mean I really yelled it. I guess a fellow has to work off steam once in a while.

He has not seen the story before. It is, by intention, slightly difficult for him. The insights into his reading process come primarily from his errors, which I choose to call miscues in order to avoid value implications. His expected responses mask the process of their attainment, but his unexpected responses have been achieved through the same process, albeit less successfully applied. The ways that they deviate from the expected reveal this process.

In the common sense view that I am rejecting, all deviations must be treated as errors. Furthermore, it must be assumed in this view that an error either indicates that the reader does not know something or that he has been "careless" in the application of his knowledge.

For example, his substitution of *the* for *your* in the first paragraph of the sample must mean that he was careless, since he has already read *your* and *the* correctly in the very same sentence. The implication is that we must teach him to be more careful, that is to be more precise in identifying each word or letter.

But now let's take the view that I have suggested. What sort of information could have led to tentatively deciding on *the* in this situation and not rejecting or refining this decision? There obviously is no graphic relationship between *your* and *the*. It may be of course, that he picked up *the* in the periphery of his visual field. But, there is an important non-graphic relationship between *the* and *your*. They both have the same grammatical function: they are, in my terminology, noun markers. Either the reader anticipated a noun marker and supplied one paying no attention to graphic information or he used *your* as a grammatical signal ignoring its graphic shape. Since the tentative choice *the* disturbs neither the meaning nor the grammar of the passage, there is no reason to reject and correct it. This explanation appears to be confirmed by two similar miscues in the next paragraph. *A* and *his* are both substituted for *the*. Neither are corrected. Though the substitution of *his* changes the meaning, the peculiar idiom used in this dictionary definition, "in the face of ill fortune," apparently has little meaning to this reader anyway.

The conclusion this time is that he is using noun markers for grammatical, as well as graphic, information in reaching his tentative conclusions. All together in reading this ten page story, he made twenty noun marker substitutions, six omissions and two insertions.

He corrected four of his substitutions and one omission. Similar miscues involved other function words (auxiliary verbs and prepositions, for example). These miscues appear to have little effect on the meaning of what he is reading. In spite of their frequency, their elimination would not substantially improve the child's reading. Insistence on more precise identification of each word might cause this reader to stop seeking grammatical information and use only graphic information.

The substitution of *hoped* for *opened* could again be regarded as careless or imprecise identification of letters. But, if we dig beyond this common sense explanation, we find 1) both are verbs and 2) the words have *key* graphic similarities. Further, there may be evidence of the reader's bilingual French-Canadian background here, as there is in subsequent miscues (*harms* for *arms, shuckled* for *chuckled, shoose* for *choose, shair* for *chair*). The correction of this miscue may involve an immediate rejection of the tentative choice made on the basis of a review of the graphic stimulus, or it may result from recognizing that it cannot lead to the rest of the sentence, "I hoped a dictionary . . ." does not make sense. (It isn't decodable). In any case, the reader has demonstrated the process by which he constantly tests his guesses, or tentative choices, if you prefer.

Sound*s* is substituted for sound*ed*, but the two differ in ending only. Common sense might lead to the conclusion that the child does not pay attention to word endings, slurs the ends or is otherwise careless. But, there is no consistent similar occurrence in other word endings. Actually, the child has substituted one inflectional ending for another. In doing so he has revealed 1) his ability to separate base and inflectional suffix, and 2) his use of inflectional endings as grammatical signals or markers. Again he has not corrected a miscue that is both grammatically and semantically acceptable.

He for *I* is a pronoun for pronoun substitution that results in a meaning change, though the antecedent is a bit vague, and the inconsistency of meaning is not easily apparent.

When we examine what the reader did with the sentence "*Might as well study word meanings first,*" we see how poorly the model of precise sequential identification fits the reading process. Essentially this reader has decoded graphic input for meaning and then encoded

meaning in oral output with transformed grammar and changed vocabulary, but with the basic meaning retained. Perhaps as he encoded his output, he was already working at the list word which followed, but the tentative choice was good enough and was not corrected.

There are two examples, in this sample, of the reader working at unknown words. He reveals a fair picture of his strategies and abilities in these miscues, though in neither is he successful. In his several attempts at *philosphical*, his first attempt comes closest. Incidentally, he reveals here that he can use a phonic letter-sound strategy when he wants to. In subsequent attempts he moves away from this sounding out, trying other possibilities, as if trying to find something which at least will sound familiar. Interestingly, here he has a definition of sorts, but no context to work with. *Philosophical* occurs as a list word a number of times in the story. In subsequent attempts, the child tried *physica, physicacol, physical, philosovigul, phizzlesovigul, phizzo sorigul, philazophgul.* He appears to move in concentric circles around the phonic information he has, trying deviations and variations. His three unsuccessful attempts at *fortune* illustrate this same process. Both words are apparently unknown to the reader. He can never really identify a word he has not heard. In such cases, unless the context or contexts sufficiently delimit the word's meaning, the reader is not able to get meaning from the words. In some instances, of course, the reader may form a fairly accurate definition of the word, even if he never recognizes it (that is matches it with a known oral equivalent) or pronounces it correctly. This reader achieved that with the word *typical* which occurred many times in the story. Throughout his reading he said *topical.* When he finished reading, a check of his comprehension indicated that he knew quite well the meaning of the word. This phenomenon is familiar to any adult reader. Each of us has many well-defined words in our reading vocabulary which we either mispronounce or do not use orally.

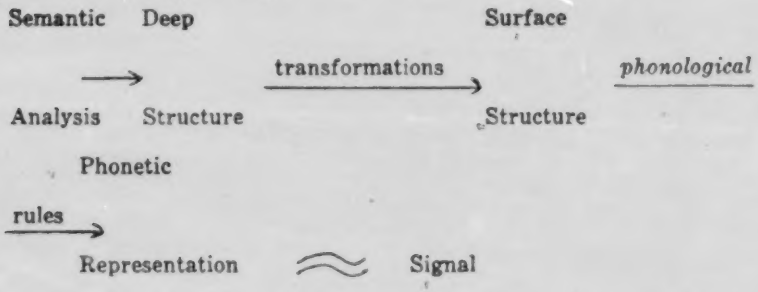
I've used the example of this youngster's oral reading not because what he's done is typical of all readers or even of readers his age, but because his miscues suggest how he carries out the psycholinguistic guessing game in reading. The miscues of other readers

show similarities and differences, but all point to a selective, tentative, anticipatory process quite unlike the process of precise, sequential identification commonly assumed.

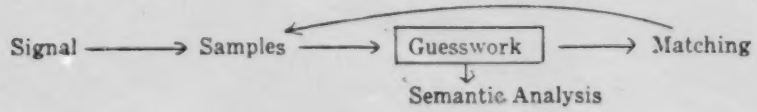
Let's take a closer look now at the components the reader manipulates in this psycholinguistic guessing game.

At any point in time, of course, the reader has available to him and brings to his reading the sum total of his experience and his language and thought development. This self-evident fact needs to be stated because what appears to be intuitive in any guessing is actually the result of knowledge so well learned that the process of its application requires little conscious effort. Most language use has reached this automatic, intuitive level. Most of us are quite unable to describe the use we make of grammar in encoding and decoding speech, yet all language users demonstrate a high degree of skill and mastery over the syntax of language even in our humblest and most informal uses of speech.

Chomsky (*3*) has suggested this model of sentence production by speakers of a language:



A model structure of the listener's sentence interpretation, according to Chomsky, is:



Thus, in Chomsky's view encoding of speech reaches a more or less precise level and the signal which results is fully formed. But in decoding, a sampling process aims at approximating the message

and any matching or coded signal which results is a kind of by-product.

In oral reading, the reader must perform two tasks at the same time. He must produce an oral language equivalent of the graphic input which is the *signal* in reading, and he must also reconstruct the meaning of what he is reading. The matching in Chomsky's interpretation model is largely what I prefer to call a recoding operation. The reader recodes the coded graphic input as phonological or oral output. Meaning is not normally involved to any extent. This recoding can even be learned by someone who doesn't speak the language at all, for example, the bar-mitzvah boy may learn to recode Hebrew script as chanted oral Hebrew with no ability to understand what he is chanting; but when the reader engages in semantic analysis to reconstruct the meaning of the writer, only then is he decoding.

In oral reading there are three logical possible arrangements of these two operations. The reader may recode graphic input as oral language and then decode it. He may recode and decode simultaneously. Or, he may decode first and then encode the meaning as oral output.

On the basis of my research to date, it appears that readers who have achieved some degree of proficiency decode directly from the graphic stimulus in a process similar to Chomsky's sampling model and then encode from the deep structure, as illustrated in Chomsky's model of sentence production. Their oral output is not directly related to the graphic stimulus and may involve transformation in vocabulary and syntax, even if meaning is retained. If their comprehension is inaccurate, they will encode this changed or incomplete meaning as oral output.

The common misconception is that graphic input is precisely and sequentially recoded as phonological input and then decoded bit by bit. Meaning is cumulative, built up a piece at a time in this view. This view appears to be supported by studies of visual perception that indicate that only a very narrow span of print on either side of the point of fixation is in sharp focus at any time. We might dub this the "end of the nose" view, since it assumes that input in reading is that which lies in sharp focus in a straight line from the end of the nose. Speed and efficiency are assumed to come from widening the span taken in on either side of the nose, moving the nose more

rapidly or avoiding backward movements of the eyes and nose, which of course must cut down on efficiency.

This view cannot possibly explain the speed with which the average adult reads, or a myriad of other constantly occurring phenomena in reading. How can it explain, for example, a highly proficient adult reader reading and rereading a paper he's written and always missing the same misprints. Or how can it explain our fourth grader seeing "Study word meanings first" and saying, "Study what it means"?

No, the "end of the nose" view of reading will not work. The reader is not confined to information he receives from a half inch of print in clear focus. Studies, in fact, indicate that children with severe visual handicaps are able to learn to read as well as normal children. Readers utilize not one, but three kinds of information simultaneously. Certainly without graphic input there would be no reading. But, the reader uses syntactic and semantic information as well. He predicts and anticipates on the basis of this information, sampling from the print just enough to confirm his guess of what's coming, to cue more semantic and syntactic information. Redundancy and sequential constraints in language, which the reader reacts to, make this prediction possible. Even the blurred and shadowy images he picks up in the peripheral area of his visual field may help to trigger or confirm guesses.

Skill in reading involves not greater precision, but more accurate first guesses based on better sampling techniques, greater control over language structure, broadened experiences and increased conceptual development. As the child develops reading skill and speed, he uses increasingly fewer graphic cues. Silent reading can then become a more rapid and efficient process than oral reading, for two reasons: 1) the reader's attention is not divided between decoding and recoding or encoding as oral output, and 2) his speed is not restricted to the speed of speech production. Reading becomes a more efficient and rapid process than listening, in fact, since listening is normally limited to the speed of the speaker.

Recent studies with speeded up electronic recordings where distortion of pitch is avoided have demonstrated that listening can be made more rapid without impairing comprehension too.

Though the beginning reader obviously needs more graphic

information in decoding and, therefore, needs to be more precise than skilled readers, evidence from a study of first graders by Goodman (*4*) indicates that they begin to sample and draw on syntactic and semantic information almost from the beginning, if they are reading material which is fully formed language.

Here are excerpts from two primer stories (*1, 2*) as they were read by a first grade child at the same session. Ostensibly (and by intent of the authors) the first, from a second preprimer, should be much easier than the second, from a third preprimer. Yet she encountered problems to the point of total confusion with the first and was able to handle exactly the same elements in the second.

Note, for example, the confusion of *come* and *here* in "Ride In." This represents a habitual association in evidence in early reading of this child. Both *come* and *here* as graphic shapes are likely to be identified as *come* or *here*. In "Stop and Go," the difficulty does not occur when the words are sequential. She also substitutes *can* for *and* in the first story, but encounters no problem with either later. *Stop* stops her completely in "Ride In," a difficulty that she dosen't seem to know she has when she reads "Stop and Go" a few minutes later. Similarly, she calls (ride) *run* in the first story, but gets it right in the latter one.

Though there are miscues in the second story, there is a very important difference. In the first story she seems to be playing a game of name the word. She is recoding graphic shapes as phonological ones. Each word is apparently a separate problem. But in "Stop and Go" what she says, including her miscues, in almost all instances makes sense and is grammatically acceptable. Notice that as *Sue* becomes better known she becomes *Suzie* to our now confident reader.

A semantic association exists between *train* and *toy*. Though the child makes the same substitution many times, nothing causes her to reject her guess. It works well each time. Having called (train) *toy*, she calls (toy) *too* (actually it's an airplane in the pictures), not once, but consistently throughout the story. That doesn't seem to make sense. That's what the researcher thought too, until the child spoke of a "little red *too*" later in retelling the story. "What's a 'little red too,' " asked the researcher. "An airplane," she replied calmly. So a train is *toy* and a plane is a *too*. Why not? But, notice that when *toy*

RIDE IN

Run
~~Ride~~ in, Sue.
Run
~~Ride~~ in here.
Come here
~~Here~~ I ~~come~~, Jimmy.
Can Come
~~And here~~ I stop.

STOP AND GO

Jimmy said, "Come here, Sue,
too
Look at my ~~toy~~ train.

See it go.
toy
Look at my lit/tle ~~train~~ go."
toy
Sue said, "Stop the ~~train~~.
Come
Stop it ~~here~~, Jimmy."
toy
Jimmy said, "I can stop the ~~train~~.
toy
See the ~~train~~ stop."
too.
Sue said, "Look at my ~~toy~~.
toy.
It is in the ~~train~~.
too
See my little red ~~toy~~, Jimmy.
toy
It can ride in the ~~train~~."
toy
Jimmy said, "See the ~~train~~ go.
Look at it go."
Suzie too
~~Sue~~ said, "Look at my little red ~~toy~~.
toy
See it go for a ~~train~~ ride."
Suzie too
~~Sue~~ said, "My little red ~~toy~~!
said too
Jimmy my ~~toy~~ is not here.
toy
It is not in the ~~train~~.
toy
Stop the ~~train~~, Jimmy.
too
Stop it and look for my ~~toy~~."

occurred preceding *train*, she could attempt nothing for *train*. There appears to be a problem for many first graders when nouns are used as adjectives.

Common sense says go back and drill her on *come, here, can, stop, ride, and;* don't let her go to the next book which she is obviously not ready to read.

But the more advanced story, with its stronger syntax, more fully formed language and increased load of meaning makes it possible for the child to use her graphic cues more effectively and supplement them with semantic and syntactic information. Teaching for more precise perception with lists and phonics charts may actually impede this child's reading development. Please notice, before we leave the passage, the effect of immediate experience on anticipation. Every one of the paragraphs in the sample starts with "Jimmy said" or "Sue said." When the reader comes to a line starting *Jimmy*, she assumes that it will be followed by *said* and it is not until her expectation is contradicted by subsequent input that she regresses and corrects her miscue.

Since they must learn to play the psycholinguistic guessing game as they develop reading ability, effective methods and materials used by teachers who understand the rules of the game, must help them to select the most productive cues, to use their knowledge of language structure, to draw on their experiences and concepts. They must be helped to discriminate between more and less useful available information. Fortunately, this parallels the processes they have used in developing the ability to comprehend spoken language. George Miller (7) has suggested ". . . psycholinguists should try to formulate performance models that will incorporate . . . hypothetical information storage and information processing components that can simulate the actual behavior of language users."

I'd like to present now my model of this psycholinguistic guessing game we call reading English. Please understand that the steps do not necessarily take place in the sequential or stretched out form they are shown here. [The model appears on page 272.]

1. The reader scans along a line of print from left to right and down the page, line by line.
2. He fixes at a point to permit eye focus. Some print will be

central and in focus, some will be peripheral; perhaps his perceptual field is a flattened circle.

3. Now begins the selection process. He picks up graphic cues, guided by constraints set up through prior choices, his language knowledge, his cognitive styles, and strategies he has learned.
4. He forms a perceptual image using these cues and his anticipated cues. This image then is partly what he sees and partly what he expected to see.
5. Now he searches his memory for related syntactic, semantic, and phonological cues. This may lead to selection of more graphic cues and to reforming the perceptual image.
6. At this point, he makes a guess or tentative choice consistent with graphic cues. Semantic analysis leads to partial decoding as far as possible. This meaning is stored in short-term memory as he proceeds.
7. If no guess is possible, he checks the recalled perceptual input and tries again. If a guess is still not possible, he takes another look at the text to gather more graphic cues.
8. If he can make a decodable choice, he tests it for semantic and grammatical acceptability in the context developed by prior choices and decoding.
9. If the tentative choice is not acceptable semantically or syntactically, then he regresses, scanning from right to left along the line and up the page to locate a point of semantic or syntactic inconsistency. When such a point is found, he starts over at that point. If no inconsistency can be identified, he reads on seeking some cue which will make it possible to reconcile the anomalous situation.
10. If the choice is acceptable, decoding is extended, meaning is assimilated with prior meaning, and prior meaning is accommodated, if necessary. Expectations are formed about input and meaning that lies ahead.
11. Then the cycle continues.

Throughout the process there is constant use of long- and short-term memory.

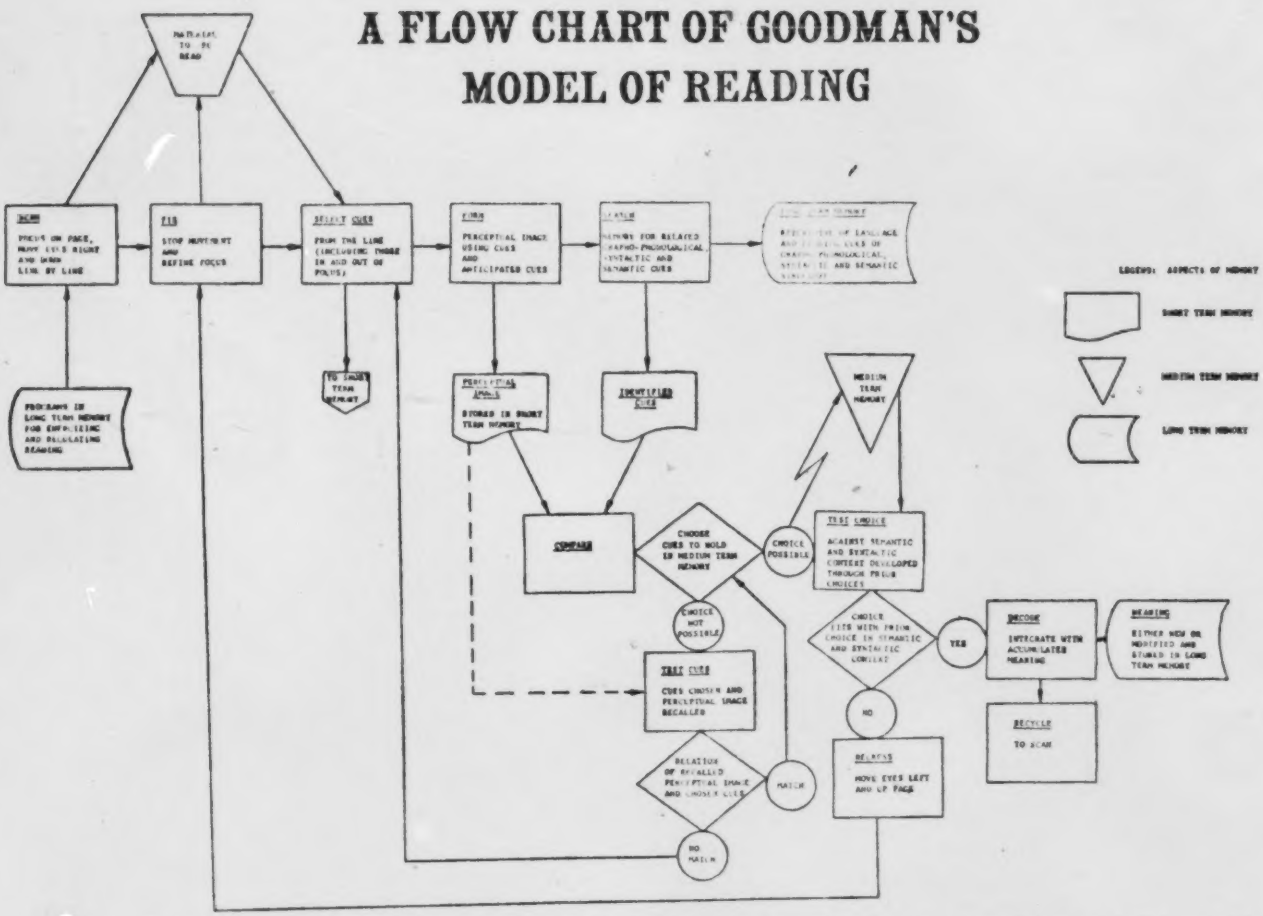
I offer no apologies for the complexity of this model. Its faults

lie, not in its complexity, but in the fact that it is not yet complex enough to fully account for the complex phenomena in the actual behavior of readers. But such is man's destiny in his quest for knowledge. Simplistic folk lore must give way to complexity as we come to know.

REFERENCES

1. Betts, Emmett A. "Ride In," *Time to Play*, Second Preprimer, Betts Basic Readers (3rd ed.), Language Arts Series. New York: American Book, 1963.
2. Betts, Emmett A., and Carolyn M. Welch. "Stop and Go," *All In A Day*, Third Preprimer, Betts Basic Readers. New York: American Book, 1963.
3. Chomsky, Noam. Lecture at Project Literacy, Cornell University, June 18, 1965.
4. Goodman, Yetta M. College of Education, Wayne State University, doctoral study of development of reading in first grade children.
5. Hayes, William D. "My Brother is a Genius," *Adventures Now and Then*, Book 6, Betts Basic Readers (3rd ed.), Emmett A. Betts and Carolyn M. Welch. New York: American Book, 1963, 246.
6. McCracken, Glenn, and Charles C. Walcutt. *Basic Reading*, teacher's edition for the preprimer and primer. Philadelphia: B. Lippincott, 1963, vii.
7. Miller, George A. "Some Preliminaries to Psycholinguistics," *American Psychologist*, Vol. 20, No. 18, 1965.
8. Spache, George. *Reading In The Elementary School.* Boston: Allyn and Bacon, 1964, 12.

A FLOW CHART OF GOODMAN'S MODEL OF READING



Editor's Note: This chart is an updated version of the model described in Goodman's article. It is taken from a report on "The Convergence Technique Application to Reading" presented to the U.S. Office of Education by William J. Gephart.

Language Assessment Techniques

compiled by
Margaret O. Knapp

A basic premise of good teaching is to start where the child is. Therefore, before any specific language activities are planned for a particular child, one should determine the child's present level of language development.

The present paper will suggest some current experimental methods from the field of psycholinguistics that you may wish to try. These methods are by no means inclusive. They were chosen for two reasons: 1) because they are likely to be unfamiliar to most teachers in the field, and 2) because by using them you will be able to get a flavor for some of the current research that is going on in the area of language development. They deal primarily with the child's development of particular syntactic forms and how the use of these syntactic forms help him to accurately describe objects and events.

Two points of caution are in order: First, because these are experimental procedures, it is wise to interpret the results generously. Second, it is all too easy to misinterpret a child's use of a "different" language, such as a black dialect, or his hesitancy to use any verbal language, as a sign of immature language and/or cognitive development. This may not really be so. Regardless of the choice of assessment techniques, care must be taken to assure an accurate measurement.

Sentence repetition

One way that we can discover a child's linguistic ability is by asking him to repeat certain sentences. The child is simply asked to repeat what the teacher says. The first two groups of sentences have been designed for research purposes with the very young child (ages three to four). Children of these ages should be able to complete the entire group of sentences. If a child eliminates any portion of any sentence, you might assume that he has not moved to that level. As a rule, children's imitations generally show a complexity which is similar to their own free speech.

Menyuk's Sentences

Transformation Type	Sentence
Passive	He got tied up.
Negative	He isn't a good boy.
Question	Are you nice?

Transformation Type	Sentence
Contraction	He'll be good.
Inversion	Now I have kittens.
Relative Question	Where are you going?
Imperative	Don't use my dough.
Pronominalization	There isn't any more.
Separation	He took it off.
Got	I've got a lollipop.
Auxiliary Be Placement	He is not going to the party.
Auxiliary Have Placement	I've already been there.
Do	I did read the book.
Possessive	I'm writing Daddy's name.
Reflexive	I cut myself.
Conjunction	Peter is over here, and you are over there.
Conjunction Deletion	I see a red book and a blue book.
Conjunction If	I'll give it to you if you want it.
Conjunction So	He saw him so he hit him.
Conjunction Because	He'll eat the ice cream because he wants to.

Gleitman, Shipley, and Smith's sentences evolve from ones that are easy to imitate to ones difficult to imitate.

Gleitman, Shipley, and Smith's Sentences

A Structures (easy to imitate)	
Number	Two of the marbles rolled away.
Conjunction	Sam and Ronny built their house.
Complement	I want to play the piano.
B Structures (difficult to imitate)	
Adjective	They played with long yellow blocks.
Verbal Auxiliary	Daddy may have missed the train.
Relative	The lady who sneezes is sick.
Conjunction Inversion	Not George but Danny came along.

The following sentences from Anastasiow et al (1969) are designed to elicit reconstructions from white standard to black and poverty English. The correct sentence and its acceptable dialect equivalent are both given. A black child who changes the sentence to conform to his own dialect is demonstrating normal cognitive functioning. These changes should not be perceived as errors. Rather, they should be seen as the child's ability to process a different form of language (standard English) into his own dialect, while maintaining meaning.

If you encounter such a child, you do not need to change the child's speech to help him understand standard English. He has already given evidence that he can understand this form. Instead, you should master his language so you recognize his different forms and in addition provide ample opportunities for him to hear and process standard forms.

Anastasiow's Sentences

Sentence Reconstruction

He was tied up.
got
She isn't a good singer.
ain't no
She said, "Whose toys are those?"
say
Jim, who tried to escape, was caught and then beaten up.
got
Although I want ice cream, I bet I'm not going to get any.
ain't gonna
The boy was hit by the girl who jumped rope in the street.
got
Joe is good when he feels like it.
be feel

The following test is an excerpt from Dale (1972). It was originally adapted from a technique first used by Berko (1958).

This test is suitable for children in the three to eight-year-old range. The teacher attempts to elicit a correct plural or past tense form from the child using pictures. Nonsense words are used to insure that successful production represents the functioning of a productive rule rather than repetition of a previously heard form. There is one item for each of the three primary plural forms (the s of cats, the z of dogs, and the ez of glasses) and one item for each of the three primary past tense forms (the t of walked, the d of hunged, and the ed of wedded).

The pictures to be used in the examples for plural should have the following form:

This is a wug.

Now there is another one. There are two of them.

There are two_____.

The pictures to be used in the past tense examples simply show a person performing some activity, and these may be cut from a magazine. Try to find pictures of people doing things that the children would not be likely to have a name for: swinging objects, doing exercises, and operating machinery are some ideas. Put the pictures and drawings on 4-by-6 inch cards or other conveniently sized cards. In the drawings to be done for the plurals, pictures of animals can be used if the child does not already know the word, or any kind of fanciful creature can be drawn.

Before the experiment proper there will be two practice items with similar words. Prepare cards for one past tense and one plural item in the same way as described above,but make sure the activity and the object are things the child would know (and that they have regular past tense and plural forms).

Procedure: Give the trials in the following order, using the verbal presentation given below as an example.

Practice Trials

A. Plural. One object, and then two. "This is a_____(appropriate name). Now there are two of them. (Point to picture of two objects.) There are two_____(wait for response).
B. Past tense. "This is a man who knows how to_____(appropriate verb). He is_____ing. He did the same thing yesterday. What did he do yesterday? Yesterday he_____ (wait for response).

Experimental Trials

1. Plural (z). "This is a wug. Now there is another one. There are two of them. There are two_____."
2. Past tense (t). "This is a man who knows how to rick. He is ricking. He did the same thing yesterday. What did he do yesterday? Yesterday he_____."
3. Plural (ez). "This is a gutch. Now there is another one. There are two of them. There are two_____."
4. Past tense (d). "This is a man who knows how to gling. He is glinging. He did the same thing yesterday. What did he do yesterday? Yesterday he_____."

Experimental Trials

5. Plural (s). "This is a zat. Now there is another one. There are two of them. There are two_____."
6. Past tense (ed). "This is a man who knows how to mot. He is motting. He did the same thing yesterday. What did he do yesterday? Yesterday he_____."

Scoring: Listen carefully to what the child says in each case, and classify it as one of the following:
Incorrect: no sound added (for example, giving the plural the same as the singular).
Correct: correct plural or past tense.

For further examples of other morphological endings you may wish to look at the original experiment by Berko.

Comprehension of syntactic forms

One of the best ways to explore the child's comprehension is to ask him to demonstrate the action described in a sentence with dolls or other toys. Bellugi-Klima has suggested a variety of such comprehension tests. The general procedure is to place objects on the table before the child, identify them, and demonstrate the action. This is done so that the only contribution the child must make is the translation of syntactic form into action. The following is abridged from the Bellugi-Klima article.

In each case these few examples can be extended to include other constructions, depending on what materials are available. Some basic materials for these tests include male and female dolls (with flexible limbs); a washcloth; doll's fork or spoon; blocks of assorted shapes and sizes; toy cat and dog or other animals; supply of marbles; clay; sticks of assorted colors, lengths, widths; balls; some doll's clothing; a bottle and cork; etc.

The objects for each problem should be set up on the table in such a way that they do not give cues to the solution of the problem and in a way that the child has to make some change or movement to demonstrate comprehension of the problem. If the problem has more than one part, it need not necessarily be given in any fixed order. The objects should be replaced in their original indeterminate position before asking another part of the problem.

The examiner should make sure at the onset of the problem that the child understands the words and actions involved.

For example, for the problem "The boy is washed by the girl," the examiner would identify the boy doll and the girl doll and demonstrate how one washes the other, being careful not to give any cues to the problem. He might say, for example, "This is how we wash." He then checks the child's understanding of "boy","girl", and "wash" before beginning. In the process it might be wise to change the order of presentation of boy and girl, so that no cues to ordering are given. Then the objects are set up in a standard way,and the problem can be given.

The problems are set up in terms of levels of difficulty. This is based on order of appearance of constructs in children's speech in current developmental studies. Not all of these tests have been tried or standardized. They should be considered as proposals based on linguistic theory, psycholinguistic research, and developmental studies of children's speech.

First Level Items

Active Sentences

Ask the child to act out the following pairs of sentences:

The boy washes the girl.
The girl washes the boy.
The cat chases the dog.
The dog chases the cat.

In each of the cases the objects are placed on the table in front of the child. Each is correctly identified and the action demonstrated so that word meanings, referents, and conventions of demonstration are all known by the child. We are really testing for subject-object relationships.

Singular/Plural Noun

A small collection of objects (balls, marbles, etc.) is placed on the table in front of the child. After they are identified, the instructions are given:

Give me the marble.
Give me the marbles.
Give me the ball.
Give me the balls.

Possessive

A small boy doll and a larger man doll. Identify one as the son and the other as the father.

Show me the boy's daddy.
Show me the daddy's boy.

A toy truck with a separate figure of a man driving the truck in the driver's seat.

Show me the truck's driver.
Show me the driver's truck.

Second Level Items

Negative/Affirmative Statements

Two dolls, one with movable arms, the other with arms that can't move. Demonstrate this without using the negative in sentences.

Show me: The doll can't put his arms down.
Show me: The doll can put his arms down.

Two dolls with flexible legs and a small chair or ledge. Show process of sitting.

Show me: The doll is sitting.
Show me: The doll is not sitting.

Two dolls and a hat which can fit on the head of either.

Show me: The doll doesn't have a hat.
Show me: The doll has a hat.

Negative/Affirmative Questions

This problem is similar to the one above but involves wh questions rather than statements.

About six objects on the table, some of which are edible and some inedible; for example, a rubber ball, an apple, a cookie, a pencil, a flower, an orange. Examiner holds out hand:

What can't you eat?
What can you eat?

A girl doll and some objects of clothing plus other objects; for example, a blouse, some shoes, a piece of chalk, a candle, a coat, a fork. Examiner holds out hand:

What does she wear?
What doesn't she wear?

Singular/Plural with Noun and Verb Inflections

Two girl dolls lying down. Demonstrate walking for child (replace items after each part of problem).

Show me: The girl walks.
Show me: The girls walk.

Two girl dolls and two washcloths (or brooms). Demonstrate washing (or sweeping).

Show me: The girls wash.
Show me: The girl washes.

Modification (Adjectival)

On the table are placed a large boy doll and a small boy doll and a large ball and a small ball. Identify only boys and balls for the child.

Show me: The little boy has a big ball.
Show me: The big boy has a little ball.

A round button, a square button, a round block, and a square block are on the table.

Put the round button on the square block.
Put the square button on the round block.

Third Level Problems

Negative Affix

An array of blocks on the table. Some are flat on the table; some are piled on top of one another. As usual, replace in original position before asking another problem.

Show me: The blocks are piled.
Show me: The blocks are unpiled.
Show me: The blocks are not unpiled.

Two jars or bottles with corks which fit in easily. One is corked and one uncorked. Let child try the process first.

Show me: The bottles are corked.
Show me: The bottles are not corked.
Show me: The bottles are not uncorked.

Reflexivization

Two boy dolls on the table and a washcloth between them. Show the action of washing. Introduce dolls by name; for example, "This is John and this is Bill."

Show me: John washed him.
Show me: John washed himself.

Two girl dolls with flexible arms. Show action of hitting, but do not use reflexive. Introduce dolls by name, "This is Sally and this is Jane."

Show me: Sally hit her.
Show me: Sally hit herself.

Comparatives

A boy doll and a girl doll. Some piles of clay or marbles.

Show me: The boy has more marbles than the girl.
Show me: The boy has less clay than the girl.

Three red sticks of different lengths. Three blue sticks of different lengths. Identify red and blue.

Give me: A red stick is shorter than a blue stick.
Give me: A red stick is longer than a blue stick.

Passives

A boy doll and a girl doll on the table and a washcloth. Identify the boy and the girl and the action of washing.

Show me: The boy is washed by the girl.
Show me: The girl is washed by the boy.

A cat and a dog (stuffed toy animals). Identify each and show action of chasing.

Show me: The cat is chased by the dog.
Show me: The dog is chased by the cat.

Self-Embedded Sentences

One of the most interesting properties of languages is that sentences can be indefinitely long; therefore, the set of possible sentences of a language is infinite. One way to achieve this length is by opening the sentence and adding constituents or sentences. Suppose the original sentence is "The boy chased the ball." We can insert "The boy who lives on the next street," giving us: "The boy who lives on the next street chased the ball." Further,we can insert "The boy lives in the white house at the top of the hill," giving us: "The boy who lives on the next street in the white house at the top of the hill chased the ball," and so on. The sentence could become indefinitely long by this process. We have embedded one sentence inside another.

We can ask the child to act out sentences of these types as follows:

A boy doll and a girl doll in standing positions with flexible arms. Identify boy and girl and demonstrate hitting and falling.

Show me: The boy that the girl hit fell down.
Show me: The girl that the boy hit fell down.

A toy cat and dog. Identify and show chasing and jumping.

Show me: The cat that the dog chased jumped.
Show me: The dog that the cat chased jumped.

Other test items may be obtained from Bellugi-Klima (1971), Fraser, Bellugi and Brown (1963) and Carrow (1968).

References

Anastasiow, N. J. et al. An Exploratory Study of the Language of Black Inner-city Elementary School Children. Institute for Child Study, 1969, 66 p. (mimeo).

Bellugi-Klima, U. Some Language Comprehension Tests. Institute for Child Study. Lavatelli, (Ed.) Language Training in Early Childhood Education. Champaign, Illinois: University of Illinois Press, 1971.

Berko, Jean. The child's learning of English morphology. Word, 1958, 14, 150-177.

Carrow, M. A. The development of auditory comprehension of language structure in children. Journal of Speech and Hearing Disorders, 1968, 33, 99-111.

Dale, Philip S. Language Development: Structure and Function. Hinsdale, Illinois: The Dryden Press, 1972.

Fraser, C., Bellugi, U. and Brown, R. Control of grammar in imitation, comprehension and production. Journal of Verbal Learning and Verbal Behavior, 1963, 2,121-135.

Gleitman, L. R., Shipley, E. F., and Smith, C. S. A study in the acquisition of language. Language, 1969, 45, 322-342.

Menyuk, P. A preliminary evaluation of grammatical capacity in children. Journal of Verbal Learning and Verbal Behavior, 1963, 2, 429-439.

Diagnostic Teaching:

A Method for Assessing Reading Skills

by

James E. Swalm

Reading has been preoccupied with methodology for a number of years, and a variety of innovative programs are currently on the market. These have been tested and re-tested as to their effectiveness, but a clearly superior method has failed to emerge.

Harris and Smith (1972) feel that a fundamental question needs to be raised when considering the effectiveness of reading programs. Specifically, are real differences in teaching method introduced by the program, or is the main distinction simply a change in format? This is not to dispute the potential value of innovative reading programs. The point is only that discussions and research must avoid confusing a teaching method with what is only a new set of instructional materials.

Students follow a variety of routes to acquiring and applying the skills of reading. Hence, a more realistic approach to teaching reading is to combine the best of all systems drawing on the strengths of each to develop an eclectic approach. As Smith (1971) states, factors relating to the teacher, the children, and the school seem more important to reading success than reliance on any one method.

The eclectic approach allows us to individualize instruction and concentrate on teaching the reading skills that underlie all of the methods of reading. The problem, however, is that for the teacher to do this, he must have a thorough knowledge of the various reading skills, their general sequence and interrelationship, and the procedures for their evaluation. In effect, the teacher must use diagnostic teaching techniques with his children if he is to truly meet their needs.

What do we mean by a diagnostic teacher of reading? He is not a reading specialist working in a clinic situation. Rather, this person is the director of a regular classroom working with the wide variety of reading abilities in that classroom. Those readers severely disabled would still receive remedial instruction from a reading specialist.

To accomplish this task the teacher must know his objectives in the following three areas of reading:

A. Word recognition

B. Reading comprehension

C. Reading fluency

A thorough understanding of the skills in each of these areas, their relative sequence of development, and the interrelationships among them permit the classroom teacher to begin teaching diagnostically. Actually, the teacher will make a series of relatively simple determinations of the students' reading skill development in a manner that will help him plan instruction more effectively. Then, the teacher can match the reading skills of each learner and the materials necessary to improve these skills commensurate with his ability.

How does the teacher obtain the information necessary to teach diagnostically? Two steps are involved. The first is an analyzation of the skills sequence in the reading series being used. This will give the teacher a complete picture of all the skills necessary to achieve reading success and their relative sequence (this varies between programs). An important point to remember is that a basal reading series only packages the reading skills in some type of instructional format.

The three areas discussed earlier are included in this skill sequence. The major tasks in word recognition are context analysis, sight words, phonic analysis and structural analysis. Dictionary analysis should also be included here because proficiency in its use is important to reading success at upper levels. The major tasks involved in reading comprehension can be classified under the headings of locating information, remembering, predicting and extending, and critical evaluation.

Reading fluency is generally considered only in relation to oral reading. However, it also applies to silent reading. Oral reading fluency includes elements of correct pronunciation of words, proper intonation, clear enunciation, adequate volume and appropriate rate. Silent reading fluency is the efficiency with which silent reading tasks can be accomplished and is measured in terms of comprehension and rate based upon the established purposes for reading and the readability level of the material.

A listing of the skill sequences in each of these areas has not been included in this paper because of the variety of arrangements possible. This information should be obtained from the teachers manual of the series being used to teach reading. The success of your reading program depends upon knowing this type of development because few series list the specific skills in the ordered sequence they are introduced.

Once the developmental sequence of the program has been isolated and written in outline form, some time should be spent evaluating that sequence in relation to your goals. Addition of any skills not included in the program but which you consider important should be made at this time. The final product should represent what you feel your students should know in the grade you are teaching.

Now we are ready to consider ways to evaluate (diagnosis) which of the skills your students know and which will need to be taught. There is a large number of standardized materials to help in this process. Those include reading survey tests, tests made for the reading series being used, tests of basic skills, etc.

Generally, the group instruments listed above are useful to begin evaluating the progress students are making in reading. These global scores give a general picture of the class and an indication of how each student is progressing. However, further evaluation will be necessary to assess the skills we have been discussing in this paper. Informal, teacher-made materials are most applicable for this purpose to insure adequate measurement of the specific skills.

These informal procedures are particularly useful in providing continuous assessment of a student's performance, thereby providing the information necessary for prescribing immediate corrective instruction. Whereas most group tests measure broad skill areas, informal measures can be used by classroom teachers to assess specific skills.

Basically, the teacher selects materials from those used in class to construct the informal measures used to diagnose . In a sense, we are talking about informally testing, then teaching to observed weaknesses, informally testing again, reteaching, etc. Hence, while evaluation is started with standardized tests, most of the information on each student's specific skill development is continuously gleaned by informal measures used while teaching. The reader can see that this approach inevitably leads to the teacher organizing the materials, the teaching techniques, and the children into instructional matches. The more that teaching is keyed to actual need, the more the program will be individualized and prescriptive in nature.

What type of materials should the teacher develop? One of the first items is an informal reading inventory constructed from a set of short basal paragraphs graded from easy to difficult (actual construction is discussed in Johnson & Kress Informal Reading Inventories published by IRA.) The student reads each paragraph aloud while the teacher notes his mistakes and determines the level of material he can read. Generally, a student should be able to pronounce 19 out of every 20 words on material used for classroom instruction.

When the student has finished reading the paragraphs, the teacher should then determine any patterns that emerge in the words missed. This can be done by classifying the errors into the following categories:

Sight Words	Consonants	Vowels	Fluency
	Initial	Long	Intonation
	Final	Diphthongs	Enunciation
	Blends	Vowel + r	Rate
	Digraphs	Digraphs	Volume

Arranging the errors this way will often isolate patterns, help the teacher make judgements about the child's development, and determine which areas to pursue further in diagnosis. The important point to consider is that this is a beginning in the assessment of how well the student has mastered the reading skills.

When the teacher feels the student has a weakness, he selects a list of specific words (or questions in comprehension) to use in evaluating the skill further. The student reads these words (or answers the questions), and his responses on the unknown ones will give more information about his development in that skill. For example, the following words might be used to assess knowledge of long vowel digraphs: leaf, feet, main, gray, coat. As the child reads these, the teacher can make judgements about the child's skills.

Several cautions need to be made concerning the development of those lists. First, the words or items should be selected carefully to insure that they measure the skill desired. Second, there is no absolute score for mastery. The teacher makes that judgement. Generally, we expect between 90 and 98% correct if the skill is known and applied.

This way of measuring skill development can easily be incorporated into the reading lessons. When introducing vocabulary, add several words to assess specific skills. These can be directed at those children you feel may be weak in that skill. Comprehension can be evaluated after the story by structuring the questions to follow one of the areas listed earlier. This

whole process would be carried on throughout the year. Those skills found to be weak could be strengthened in succeeding lessons.

An important ingredient in this approach is a check sheet listing every skill the student must master and the approximate level at which mastery is anticipated. As the student masters the skills, they are checked on the list. This type of program makes record keeping easier and provides the teacher with up-to-date information on each of his students' skill development. A sample check list has been included.

This paper has presented a procedure for assessing skill development when teaching diagnostically. The diagnostic concept is not new, but as Harris and Smith (1972) state, not much has been written on the how-to-do-it level. This paper is a beginning in the direction of helping teachers implement diagnostic teaching

Bibliography

Guszak, Frank J. Diagnostic Reading Instruction in the Elementary School. New York: Harper and Row, 1972.

Harris, Larry A. and Smith, Carl B. Reading Instruction Through Diagnostic Teaching. New York: Holt, Rinehart and Winston, Inc. 1972.

Smith, Nila B. "Strategies for Improving the Teaching of Decoding Skills" in Nila B. Smith (ed.) Reading Methods and Teacher Improvement. Newark, Delaware: International Reading Association, 1971.

INDIVIDUAL READING RECORD

Name _____ Grade _____ Age _____

Reading Levels

Ind. _____ Inst. _____ Frus. _____

I. *WORD ANALYSIS*

A. Sight Vocabulary _____

B. Phonic Analysis

1. Auditory-Visual Discrimination _____
2. Initial Consonants _____
3. Consonant Digraphs _____
4. Consonant Blends _____
5. Final Consonants _____
6. Silent Consonants _____
7. Vowels _____

C. Structural Analysis

1. Plurals _____
2. Compound Words _____
3. Contractions _____
4. Suffixes-Prefixes _____
5. Syllabication _____
6. Root Words _____
7. Inflectional Endings _____

D. Context Clues _____

II. *COMPREHENSION SKILLS*

1. Synonyms _____
2. Antonyms _____
3. Homonyms _____
4. Figurative Language _____

B. Literal Comprehension _____

C. Interpretive Comprehension _____

D. Critical Reading _____

E. Study Skills _____

F. Content Area Reading _____

III. *ORAL READING* _____

IV. *MOTIVATION* _____

Standardized Reading Tests-How Usable Are They?

by Joseph Zelnick

Approximately 37 million standardized tests are administered in American schools each year. In certain instances the scores are used for grouping or class placement. Occasionally, they are used to determine individual strengths and weaknesses in specific skills. More likely, however, beyond being recorded in cumulative record folders, test scores will remain unused along with last year's and, probably, next year's results.

Several reasons can be offered as to why teachers do not make more extensive use of test results. The concern in this paper is with the kinds of information that tests do and do not give and with the implications they have for classroom practice. Teachers do not have to become test experts in order to choose the right test for the behavior to be measured. But a working knowledge of strengths and weaknesses can result in improved evaluation of reading performance.

Some of the limitations frequently found in standardized tests[4] are:

(1) They often do not have good content validity. That is, they do not adequately measure those skills which are actually being taught in the classroom. For example, a comprehension test of literal meaning will not tell how well a student can discern the tone or mood of a selection. Similarly, a vocabulary test which includes only lists of words will give no indication of a student's ability to use context clues.

(2) Tests scores seldom represent students' true reading levels. For practical purposes tests have errors of measurement. This means that there may be wide discrepancies, either higher or lower, between the test scores and the levels at which the students are functioning.

(3) Test manuals are often incomplete with regard to important information for the user. The validity of the test may not be fully explained (how well does the test do what it purports to do?). Frequently, not enough details are provided about the population on which the norms are based. Too often only cursory explanations are given in regard to chance-level scores, i.e. grade level scores which might be achieved by pure guessing.

Do the above shortcomings suggest that standardized tests be abandoned? Not really. They can help a teacher plan an instructional program or decide whether materials or methods are still applicable for her class. They can reinforce her opinions about pupils, especially in discussions with adminstrators or parents.

The following suggestions are offered when standardized tests are being used to evaluate reading performance:

(1) Tests should be carefully examined to determine how closely they match instructional objectives. This knowledge will enable the teacher to estimate the extent to which she can use a particular test, or its subtests, for planning an instructional program.

(2) Standardized tests will more often serve as indicators of frustrational level rather than instructional level. Probably most pupils will exert their best efforts, including guessing, to achieve the best possible scores. It is unlikely that such an effort could be sustained in a normal classroom situation. Also, classroom materials would normally not be as difficult as the items on the upper limits of a standardized test. Therefore, it would be advisable to subtract about one year from a test score when considering materials for classroom instruction.

(3) Subtest scores should be viewed with caution. Generally, they provide more relevant information than total reading scores. However, subtests often overlap in the skills they measure. For this reason they may not be accurate gauges of separate reading skills. For example, it is entirely possible that the vocabulary and comprehension sections on a given reading test could actually be measuring the same skill, thus having only limited use for the classroom teacher.

(4) Teachers should become familiar with the broader aspects of evaluating reading performance. Not only should they know which reading skills are relevant for their pupils, but which informal as well as formal techniques can be used in appraising these skills. Such information is contained in two volumes published by the International Reading Association (3,8).

Davis (2) lists eight skills that determine good reading comprehension. They are:

(1) recalling word meanings
(2) using contextual clues to draw inferences about word meanings
(3) finding answers to questions either directly stated or paraphrased
(4) recognizing the relationship among ideas
(5) recognizing the purpose, attitude, tone, and mood of the author
(6) identifying the writer's techniques
(7) following the structure of the passage
(8) drawing conclusions from context

Obviously, some of these skills will be more important than others, depending on instructional objectives and grade level being taught. But an examination of any particular test in terms of such skills will give the teacher a good idea of its content validity. A test which includes only two or three of the above skills would not be very valid for measuring total comprehension (7).

Fry (6) presents recommendations which are useful in selecting a reading test. After checking Buros'(1) Mental Measurements Yearbook for currently available tests, a number of criteria should be applied.

(1) Validity. Does the test really measure what it claims to measure?

(2) Reliability. Can we depend on the test results? Will they be consistent? For example, can we expect that a pupil's scores on two different forms will be almost the same? Will the test adequately reflect learning after a period of time?

(3) Range. Does the test have adequate range for the group being tested? Will it be too easy for the faster pupils; too hard for the slower ones? Will most of the pupils being tested fit into the usable range?

(4) Standardization. How well does the group being tested compare with the population on which the norms are based? If there are wide differences between the two groups, it might be a good idea to look for a more appropriate test.

(5) Scoring. Does the publisher provide aides which make scoring easier? Most tests can be machine-scored by the publisher. However, individual responses and student behavior can sometimes be better observed when tests are scored by teachers.

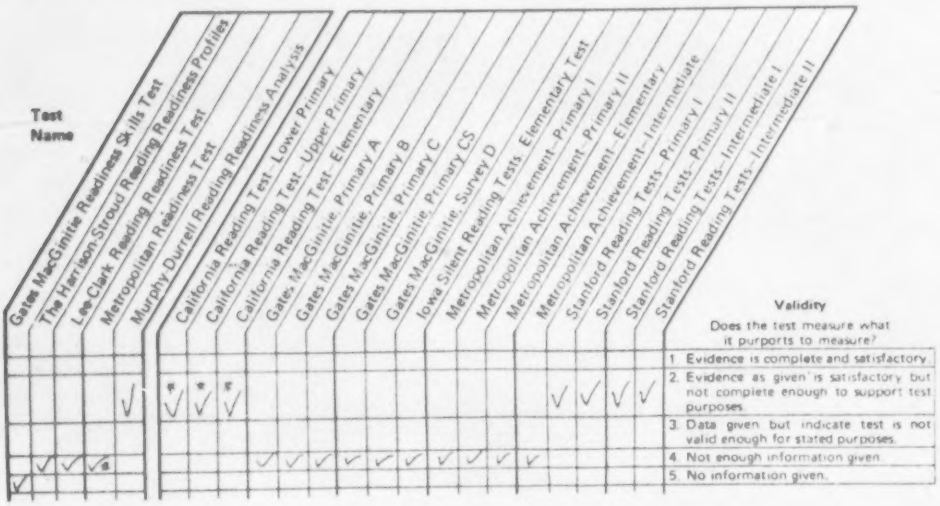
(6) Time. How long will it take to administer the test? How many sittings will be required? Is it too short to be accurate or too long to sustain pupil interest and motivation?

(7) Critical Reviews. What do experts think of the test? Very often they will have insights which are overlooked by the teacher or administrator. It would be well to check their opinions before purchasing a test. The best source for such reviews is the Mental Measurements Yearbook, by Buros.

In addition to the foregoing considerations, the charts on the following pages are included. (5) The first set summarizes the technical information that publishers supply about given tests. The second set gives general descriptions of the more widely used reading tests.

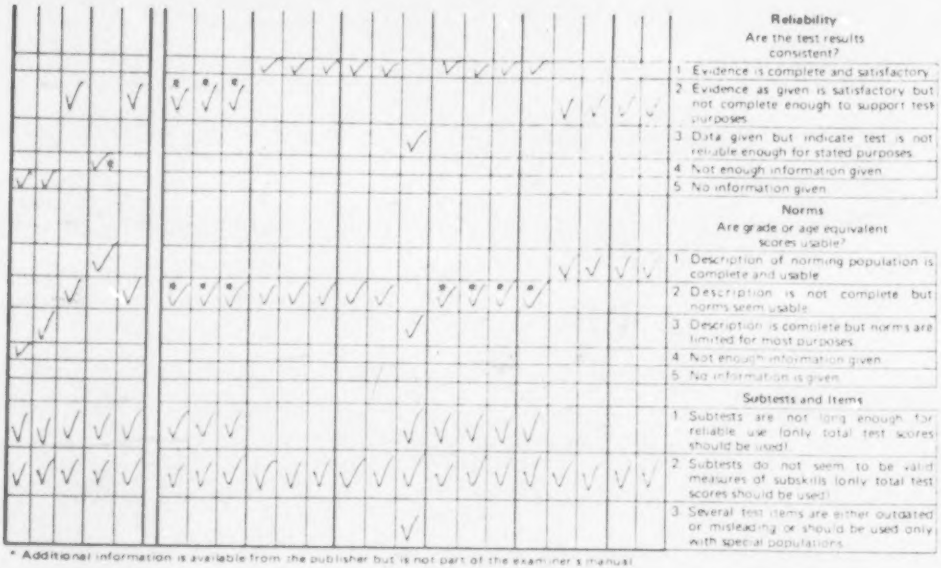
EVALUATION OF THE TECHNICAL INFORMATION SUPPLIED BY THE PUBLISHER

READING READINESS TESTS | **ELEMENTARY LEVEL READING ACHIEVEMENT TESTS**



Validity
Does the test measure what it purports to measure?

1. Evidence is complete and satisfactory.
2. Evidence as given is satisfactory, but not complete enough to support test purposes.
3. Data given but indicate test is not valid enough for stated purposes.
4. Not enough information given.
5. No information given.



Reliability
Are the test results consistent?

1. Evidence is complete and satisfactory.
2. Evidence as given is satisfactory, but not complete enough to support test purposes.
3. Data given but indicate test is not reliable enough for stated purposes.
4. Not enough information given.
5. No information given.

Norms
Are grade or age equivalent scores usable?

1. Description of norming population is complete and usable.
2. Description is not complete, but norms seem usable.
3. Description is complete but norms are limited for most purposes.
4. Not enough information given.
5. No information is given.

Subtests and Items

1. Subtests are not long enough for reliable use (only total test scores should be used).
2. Subtests do not seem to be valid measures of subskills (only total test scores should be used).
3. Several test items are either outdated or misleading or should be used only with special populations.

* Additional information is available from the publisher but is not part of the examiner's manual.

DESCRIPTION OF READINESS TESTS REVIEWED

Name of Test	Subtests	Publication Date	Revision Date	Authors	Publisher	Time
Gates-MacGinitie Reading Tests--Readiness Skills	Listening comprehension; auditory discrimination; visual discrimination; following directions; letter recognition; visual-motor coordination; auditory blending	1968		Gates & MacGinitie	Teachers College Press Columbia University	120 min.
Harrison-Stroud Reading Readiness Profile	Using Symbols; making visual discriminations; using the context; making auditory discriminations; using context and auditory clues; giving names of letters.	1949	1956	Harrison & Stroud	Houghton-Mifflin	80 min.
Lee-Clark Reading Readiness Test	Matching; cross-out; vocabulary and following directions; identification of letters and words.	1931	1962	Lee and Clark	California Test Bureau	20 min.
Metropolitan Readiness Tests	Word meaning; listening; matching; alphabet; numbers; copying; draw-a-man.	1933	1965	Hildreth & Griffiths	Harcourt, Brace & World	60 min.
Murphy-Durrell Reading Readiness Analysis	Phonemes; letter names; learning rate	1949	1965	Murphy & Durrell	Harcourt, Brace & World	100 min.

DESCRIPTION OF ACHIEVEMENT TESTS REVIEWED

Name of Test	Subtests	Grade	Publication Date	Authors	Publisher	Time
California Reading Test	Vocabulary; comprehension					
Lower Primary	Vocabulary; comprehension	1-2	1957	Tiegs & Clark	California Test Bur	45 min.
Upper Primary	Vocabulary; comprehension	2.5-4.5	(rev. 1963)			40 min.
Elementary		4-6				40 min.
Gates MacGinitie Reading Test	Vocabulary; comprehension					
Primary A	Vocabulary; comprehension	1	1965	Gates & MacGinitie	Teachers College Press, Columbia University	55 min.
Primary B	Vocabulary; comprehension	2				55 min.
Primary C	Speed and Accuracy	3				65 min.
Primary CS	Vocabulary; comprehension; speed and accuracy.	2,3				17 min.
Survey D		4,5,6				65 min.
Iowa Silent Reading Test	Rate; comprehension; directed reading; word meaning; paragraph comprehension; sentence meaning; alphabetizing and use of index.	4-8	1943	Greene & Kelley	Harcourt, Brace & World	60 min.
Elementary Test						
Metropolitan Achievement Test						
Primary I	Word Knowledge; word discrimination; reading	R-1	1959	Bixler, et al	Harcourt, Brace & World	63 min.
Primary II	Word Knowledge; word discrimination; reading	2				65 min.
Elementary	Word Knowledge; reading	3-4				35 min.
Intermediate	Word Knowledge; reading	4-5				45 min.
Stanford Reading Test						
Primary I	Word reading; paragraph meaning		1923	Kelley, et al	Harcourt, Brace & World	55 min.
Primary II	Word reading; paragraph meaning		(rev. 1964)			60 min.
Intermediate I	Word reading; paragraph meaning					50 min.
Intermediate II	Word reading; paragraph meaning					55 min.

References

1. Buros, Oscar K. The Seventh Mental Measurements Yearbook, Highland Park, New Jersey: Gryphon Press, 1972.

2. Davis, Fred B. Identification and Measurement of Reading Skills of High School Students. Washington, D. C.: Office of Education, United States Department of Health, Education and Welfare, 1967.

3. DeBoer, Dorothy L. (Ed.) Reading Diagnosis and Evaluation. Newark, Delaware: International Reading Association, 1970.

4. Fan, Roger. "Reading Tests and Teachers," in Dorothy L. DeBoer (Ed.) Reading Diagnosis and Evaluation. Newark, Delaware: International Reading Association, 1970, 49-54.

5. Fan, Roger and Nicholas Anastasiow. Tests of Reading Readiness and Achievement. Newark, Delaware: International Reading Association, 1969, 48-51.

6. Fry, Edward B. Reading Instruction for Classroom and Clinic. New York: McGraw-Hill, 1972, 29-32.

7. Glock, Marvin. "How the Classroom Teacher Can Use a Knowledge of Tests and Measurements," in Robert E. Leibert (Ed.) Diagnostic Viewpoints in Reading. Newark, Delaware: International Reading Association, 1971, 31-40.

8. Leibert, Robert E. (Ed.). Diagnostic Viewpoints in Reading, Newark, Delaware: International Reading Association, 1971.

9. Sawyer, Rita. "Classroom Diagnosis," Proceedings of College Reading Association, 9. Fall, 1968.

Roles, Responsibilities, and Qualifications of Reading Specialists

by The Professional Standards
and Ethics Committee of the
International Reading Association*

Concern about reading achievement and the teaching of reading has resulted in a sharp increase in the number of available reading teachers. Even though some states have established certain criteria for their positions, many reading specialists are not adequately prepared for their positions. The following selection can serve as a guide for administrators or teachers who are desirous of specializing in the teaching of reading or supervision of reading instruction.

The Purpose of This Statement

This statement of the roles, responsibilities,and qualifications of reading specialists has been formulated by the Professional Standards and Ethics Committee and approved by the Board of Directors of the International Reading Association. It is intended that these minimum standards will serve as guides to:

1. Teachers and administrators in identifying the reading specialist.
2. State and provincial departments of education in certifying specialists in reading.
3. Colleges and universities offering professional programs in reading.
4. Individuals planning to train as reading specialists.

These standards are under constant study and are periodically revised by the committee. This 1968 guide is a revision and extension of the brochure, "Minimum Standards for Professional Training of Reading Specialists," published in 1965.

The Need For Establishing Standards

Reading is a complex process that develops within an individual throughout years of formal schooling and adult life. As a result of expanded knowledge, the demand for trained personnel in reading at all levels has increased tremendously. With the demand high and the supply relatively short, the danger of unqualified persons attempting those tasks which only a trained reading specialist should undertake has become a very real one. One means of preventing such occurences is by establishing minimum standards for the professional training of reading specialists.

---

*Also found in:
Remedial Reading: Classroom and Clinic, ed. Leo M. Schell and Paul C. Burns. Allyn and Bacon, Inc., Boston: 1972, pp. 36-43.

The reading specialist may be designated as that person (1) who works directly or indirectly with those pupils who have either failed to benefit from regular classroom instruction in reading or those pupils who could benefit from advanced training in reading skills and/or (2) who works with teachers, administrators, and other professionals to improve and coordinate the total reading program of the school.

Definition of Roles

Reading personnel can be divided into two categories: those who work directly with children either as reading teachers or reading clinicians; and those who work directly with teachers as consultants or supervisors with prime responsiblity for staff and program.

A. Special Teacher of Reading

A Special Teacher of Reading has major responsibility for remedial and corrective and/or developmental reading instruction.

B. Reading Clinician

A Reading Clinician provides diagnosis, remediation, or the planning of remediation for the more complex and severe reading disability cases.

C. Reading Consultant

A Reading Consultant works directly with teachers, administrators, and other professionals within a school to develop and implement the reading program under the direction of a supervisor with special training in reading.

D. Reading Supervisor (Coordinator or Director)

A Reading Supervisor provides leadership in all phases of the reading program in a school system.

Responsibilities of Each Reading Specialist

A. Special Teacher of Reading

*Should identify students needing diagnosis and/or remediation.

*Should plan a program of remediation from data gathered through diagnosis.

*Should implement such a program of remediation.

*Should evaluate student progress in remediation.

*Should interpret student needs and progress in remediation to the classroom teacher and the parents.

*Should plan and implement a developmental or advanced program as necessary.

B. Reading Clinician

*Should demonstrate all the skills expected of the Special Teacher of Reading and, by virtue of additional training and experience, diagnose and treat the more complex and severe reading disability cases.

*Should demonstrate proficiency in providing internship training for prospective clinicians and/or Special Teacher of Reading.

C. Reading Consultant

*Should survey and evaluate the ongoing program and make suggestions for needed changes.

*Should translate the district philosophy of reading with the help of the principal of each school into a working program consistent with the needs of the students, the teachers, and the community.

*Should work with classroom teachers and others in improving the developmental and corrective aspects of the reading program.

D. Reading Supervisor

*Should develop a system-wide reading philosophy and curriculum, and interpret this to the school administration, staff, and public.

*Should exercise leadership with all personnel in carrying out good reading practices.

*Should evaluate reading personnel and personnel needs in all phases of a school-wide reading program.

*Should make recommendations to the administration regarding the reading budget.

Qualifications

A. General (Applicable to all Reading Specialists)

*Demonstrate proficiency in evaluating and implementing research.

*Demonstrate a willingness to make a meaningful contribution to professional organizations related to reading.

*Demonstrate a willingness to assume leadership in improving the reading program.

B. Special Teacher of Reading

*Complete a minimum of three years of successful classroom teaching in which the teaching of reading is an important responsibility of the position.

*Complete a planned program for the Master's Degree from an accredited institution, to include:

1. A minimum of 12 semester hours in graduate level reading courses with at least one course in each of the following:

   (a) Foundations or survey of reading
   A basic course whose content is related exclusively to reading instruction or the psychology of reading. Such a course ordinarily would be first in a sequence of reading courses.
   (b) Diagnosis and correction of reading disabilities
   The content of this course or courses includes the following: causes of reading disabilities; observation and interview procedures; diagnostic instruments; standard and informal tests; report writing; materials and methods of instruction.
   (c) Clinical or laboratory practicum in reading
   A clinical or laboratory experience which might be an integral part of a course or courses in the diagnosis and correction of reading disabilities. Students diagnose and treat reading disability cases under supervision.

2. Complete, at undergraduate or graduate level, study in each of the following areas:

   (a) Measurement and/or evaluation.
   (b) Child and/or adolescent psychology.
   (c) Psychology, including such aspects as personality, cognition, and learning behaviors.
   (d) Literature for children and/or adolescents.

3. Fulfill remaining portions of the program from related areas of study.

C. Reading Clinician

*Meet the qualifications as stipulated for the Special Teacher of Reading.

*Complete, in addition to the above, a sixth year of graduate work including:

1. An advanced course or courses in the diagnosis and remediation of reading and learning problems.
2. A course or courses in individual testing.
3. An advanced clinical or laboratory practicum in the diagnosis and remediation of reading difficulties.
4. Field experiences under the direction of a qualified Reading Clinician.

D. Reading Consultant

*Meet the qualifications as stipulated for the Special Teacher of Reading.

*Complete, in addition to the above, a sixth year of graduate work including:

1. An advanced course in the remediation and diagnosis of reading and learning problems.
2. An advanced course in the developmental aspects of a reading program.
3. A course or courses in curriculum development and supervision.
4. A course and/or experience in public relations.
5. Field experiences under a qualified Reading Consultant or Supervisor in a school setting.

E. Reading Supervisor

*Meet the qualifications as stipulated for the Special Teacher of Reading.

*Complete, in addition to the above, a sixth year of graduate work including:

1. Courses listed as 1, 2, 3, and 4 under Reading Consultant.
2. A course or courses in administrative procedures.
3. Field experiences under a qualified Reading Supervisor.

Code Of Ethics

The members of the International Reading Association who are concerned with the teaching of reading form a group of professional persons, obligated to society and devoted to the

service and welfare of individuals through teaching, clinical services, research, and publication. The members of this group are committed to values which are the foundation of a democratic society--freedom to teach, write, and study in an atmosphere conducive to the best interests of the profession. The welfare of the public, the profession, and the individuals concerned should be of primary consideration in recommending candidates for degrees, positions, advancements, the recognition of professional activity, and for certification in those areas where certification exists.

Ethical Standards in Professional Relationships

1. It is the obligation of all members of the International Reading Association to observe the Code of Ethics of the organization and to act accordingly so as to advance the status and prestige of the Association and of the profession as a whole. Members should assist in establishing the highest professional standards for reading programs and services, and should enlist support for these through dissemination of pertinent information to the public.
2. It is the obligation of all members to maintain relationships with other professional persons, striving for harmony, avoiding personal controversy, encouraging cooperative effort, and making known the obligations and services rendered by the reading specialist.
3. It is the obligation of members to report results of research and other developments in reading.
4. Members should not claim nor advertise affiliation with the International Reading Association as evidence of their competence in reading.

Ethical Standards in Reading Services

1. Reading specialists must possess suitable qualifications for engaging in consulting, clinical, or remedial work. Unqualified persons should not engage in such activities except under the direct supervision of one who is properly qualified. Professional intent and the welfare of the person seeking the services of the reading specialist should govern all consulting or clinical activities such as counseling, administering diagnostic tests, or providing remediation. It is the duty of the reading specialist to keep relationships with clients and interested persons on a professional level.
2. Information derived from consulting and/or clinical services should be regarded as confidential. Expressed consent of persons involved should be secured before releasing information to outside agencies.
3. Reading specialists should recognize the boundaries of their competence and should not offer services which fail to meet professional standards established by other disciplines. They should be free, however, to give assistance in other areas in which they are qualified.

4. Referral should be made to specialists in allied fields as needed. When such referral is made, pertinent information should be made available to consulting specialists.
5. Reading clinics and/or reading specialists offering professional services should refrain from guaranteeing easy solutions or favorable outcomes as a result of their work, and their advertising should be consistent with that of allied professions. They should not accept for remediation any persons who are unlikely to benefit from their instruction, and they should work to accomplish the greatest possible improvement in the shortest time.

Are You Qualified to Teach Reading in New Jersey?

There are basically four ways in which a teacher in New Jersey may fulfill the requirements for teaching reading.

(1) Certification in Reading is granted upon attainment of an M. A. in Reading in an approved program.

(2) A reading Endorsement is granted on either an elementary or secondary teaching certificate upon the attainment of twenty-four graduate credits in approved courses in the following areas:
   a. 12 credits in Reading
   b. 12 credits in allied fields such as educational psychology, tests and measurements, child development, etc.

(3) A teacher certified to teach on the elementary level may teach any subject on that level or any subject on a remedial level in the secondary school.

(4) A certified secondary English teacher may teach reading at any grade level.